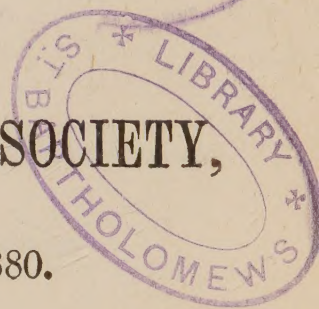
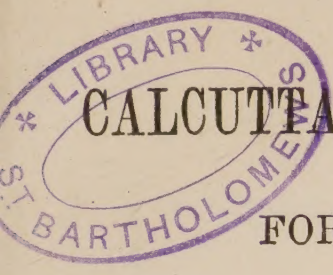




J. Lauder Brunton
TRANSACTIONS
OF THE



CALCUTTA MEDICAL SOCIETY,

FOR THE YEAR 1880.

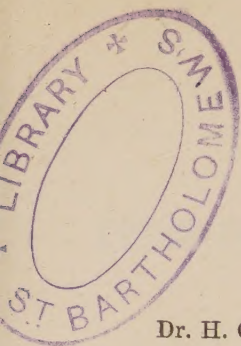
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RULES OF THE CALCUTTA MEDICAL SOCIETY.

CONDITIONS OF ADMISSION.

I. All medical men in possession of a degree, license or diploma in medicine or surgery are eligible as members.

II. Medical practitioners not in possession of a degree, license or diploma may attend as visitors and take part in the proceedings on the invitation of the President.

III. Medical students are permitted to attend the meetings of the Society ; but will not be allowed to take part in the proceedings.

IV. Medical men residing elsewhere are eligible as members on the same condition as residents of Calcutta.

V. Honorary members may be elected at any ordinary meeting of the Society.

CONSTITUTION.

VI. The office-bearers of the Society are :—A President, two Vice-Presidents, two Secretaries, one Treasurer, and an Executive Committee composed of six members.


VII. These will be elected annually at the first meeting of the year, by ballot, on the nomination of the Executive Committee.

VIII. On a vacancy occurring intermediately, an election to fill it up will take place at the next meeting in a similar manner.

THE PRESIDENT.

IX. The President will take the chair at each meeting, or, in his absence, one of the Vice-Presidents, or in the absence of these, any member elected by the meeting.

X. The President will be *ex-officio* Chairman and convener of the Executive Committee, and the Vice-Presidents, Secretaries and Treasurer members.



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THE CALCUTTA MEDICAL SOCIETY.

THE first Meeting of this Society was held at the Medical College on Wednesday, the 21st of January 1880, at 8-30 P. M.

Dr. D. B. SMITH, who was unanimously elected Chairman, remarked that, before proceeding to the business of the evening, it was necessary that the Society should be constituted by adoption of the rules which had been drawn up by the Committee nominated for that purpose, at the preliminary meeting held on the 24th of November and in accordance with the resolutions passed at that meeting.

The rules having been read, it was proposed by Dr. CAYLEY, seconded by Baboo KANNY LOLL DEY, Rai Bahadoor, and carried *nem. con.*, that the rules be adopted as drafted by the Committee.

Dr. MCLEOD intimated that the following list of office-bearers had, after careful consideration, been drawn up by the Committee.

President.—DR. D. B. SMITH.

Vice-Presidents.—DR. H. CAYLEY and MOULVIE TAMEEZ KHAN, KHAN BAHADOOR.

Secretaries.—DR. K. MCLEOD and DR. R. HARVEY.

Treasurer.—BABOO TARA PROSUNNO ROY, L.M.S.

Executive Committee.—BABOO KANNY LOLL DEY, RAI BAHADOOR ; DR. D. O'C. RAYE ; BABOO LALL MADHUB MOOKERJEE, L.M.S. ; DR. E. W. CHAMBERS ; BABOO SURJEE COOMAR SURBADICARY, L.M.S., and BABOO DOYAL CHUNDER SHOME, L.M.S.

On the motion of DR. MOHENDRA LALL SIRCAR, seconded by BABOO JUGGERNATH SEN, it was unanimously resolved that the list be accepted.

Dr. D. B. SMITH exhibited a curious and rare malformation of the heart which had been discovered on post-mortem examination in the body of a young female about 20 years of age. The facts of the case were briefly as follows :—

She had been subject to palpitation of the heart since childhood. Was admitted into hospital on the 2nd of December,

and died on the 29th of the same month. It was said that about six months ago she fell on her back on a hard floor. Three days afterwards, she complained of numbness in her lower limbs almost immediately followed by incomplete loss of motion and sensation and retention of urine. A small painful tumour about the size of a nut was then noticed at the upper part of the dorsal region close to the spine. This went on increasing; she suffered from fever, burning and aching pain in the tumour.

On her admission a large oval swelling was found to exist over the left vertebral groove, extending from the level of the spine of the scapula to that of the last rib. It was almost immovable. The cardiac dulness extended to the right of the sternum. There was nothing abnormal in the lungs. A distinct rasping thrill (fremitus) was felt all over the precordial region, and the first-sound of the heart was replaced by a loud bruit heard all over the chest. The second sound was also considerably obscured. The heart's action was irregular. The pulse was soft, irregular and intermittent. There was neither dyspnoea nor marked cyanosis till within a few days of death.

The state of the heart was as follows :—

Right Ventricle :—4 openings—1, aorta ; 2, pulmonary artery ; 3, into left ventricle ; 4, into right auricle.

Right Auricle :—Really one cavity formed by both auricles, the septum being extremely rudimentary, leaving a pseudo-foramen ovale, which however communicates with the left ventricle.

Left Ventricle :—Rudimentary. 2 openings, one, the above, into the common auricle ; the other through the septum into the right ventricle.

Left Auricle :—Outline distinct, but cavity rudimentary and freely communicating with the right, so as really to form one common auricle.

Admixture of blood must have been free.

The heart was in fact of a reptilian type. A large tumour was found in the left dorsal region closely connected with the spine. The growth was highly vascular, permeated in all directions by large soft walled capillary vessels.

There was no capsule. The tumour tissue was found on microscopic examination, by Dr. McConnell, to be distinctly infiltrative in character. It was undoubtedly a "small round-celled sarcoma."

There was pressure on the spinal cord, which was softened, and softening of the vertebræ.

The lungs were found to be normal.

Baboo AVINAS CHUNDRA BANERJI remarked that the condition of the spleen was also remarkable in this case. There were seven distinct spleens each with separate capsule and vessels. Could this condition be rationally associated with the malformation of the heart?

Dr. MULLEN said that a deeply fissured or lobulated condition of the spleen was very commonly found in examining the bodies of natives. He thought that the separate spleens in this case were an exaggerated lobulation.

Dr. K. MCLEOD exhibited a preparation taken from a case of fæcal fistula which had recently died in hospital. The patient was a lascar, and had got a sudden pain in his right inguinal region in the Red Sea on the voyage out about a month before admission; this was followed by fever and swelling, and a few days before he came to hospital he had passed a lot of pus per rectum.

A hard globular swelling fluctuating indistinctly existed below the umbilicus and to the right of the linea alba. It was found to contain pus, and was laid open under antiseptic precautions. The operation was followed by relief. A few blood clots passed per rectum and the discharge soon became fæculent. The outer orifice closed in a week or two, but tension, pain and fever ensued, and it had to be opened again. A large drainage tube was inserted and kept in, and the abscess cavity appeared to be contracting. He got diarrhœa and fell into a state of prostration with obstinate hiccup and died about two months after admission into hospital. On dissection a large ragged hole was found in the cœcum which led into the abscess cavity. Nature had made strong efforts to remedy the condition; the abscess cavity was stuffed with large polypoid masses of lymph partially organized and impregnated on their surface with fæculent material. These

masses bulged through both inner and outer openings, and similar excrescences had grown from the healthy mucous membrane in the neighbourhood.

Baboo LALL MADHUB MOOKERJEE saw a similar case in which a worm came through along with the fæculent material. The patient, a child, had dysentery and a threatening of liver abscess, but eventually recovered.

Dr. CAYLEY had also seen this case. and thought that the worm was probably the cause of the abscess, having perhaps got into the appendix vermiformis.

Dr. D. B. SMITH exhibited a picture of a man who had a severe attack of colic, and tied a stout piece of bamboo tightly across his umbilicus with ropes for the cure of his pain.

Dr. HARVEY showed a heart removed from the body of a man who had died of arsenical poisoning in which sub-endocardial ecchymosis was very characteristically shown.

Baboo KANNY LOLL DEY had seen this appearance in the heart of a horse. Indeed it was the discovery of the ecchymosis under the lining membrane of the heart which led him to search for arsenic which he found in large quantity.

Dr. SMITH had frequently used arsenic as a cardiac stimulant following Dr. Balfour of Edinburgh.

Dr. HARVEY mentioned that Dr. McConnell had seen the same condition in cholera.

Dr. D. B. SMITH, in submitting to the Society a few remarks on *Acute œdema*—(the so-called “new disease”)—observed that what he was about to say was intended to be rather suggestive than descriptive, with the view of eliciting any observations which members might have made regarding what certainly appeared to be, in some respects, a new malady, which had been first noticed in Calcutta in 1877; which was now prevailing in some parts of the town and suburbs rather extensively; and which had also been observed in certain other parts of Bengal and Assam, as at Dacca, Sylhet and Shillong.

The uncertainty which prevailed regarding the nature of the disease was significantly indicated by the variety of names which had been given to it. *Ex. gr.* the “new disease,” “acute cedema,” “lymphatic fever,” and “beriberi.” Several

contributions, having reference to this affection, had appeared in the *Indian Medical Gazette* during the last two years, the authors being Drs. Cayley, O'Brien, Payne, McConnell, Crombie, Maurice Smith and Alexander Nairne. These articles contained much interesting information, but exhaustive and precise knowledge of the disease had yet to be worked out. Dr. Smith hoped that this Society would materially promote such a result. With this object in view, he ventured to bring forward the following suggestions and hints regarding the directions in which additional knowledge was required. In the first place it was very necessary to determine under what circumstances the disease broke out and prevailed. Was it invariably associated with any general or special insanitary conditions? Dr. O'Brien attributed it to lateness of the rains, and to dampness and cold. But it was now prevailing here when these conditions were absent. Last year, Dr. McConnell was inclined to think that "the disease was by no means a special or peculiar one," but merely the result of ordinary malarious fever, attacking persons previously reduced by insufficient or improper food. He thought that it would disappear with the rains; but this had not been the case, inasmuch as it was now prevailing in the cold, dry season. Does it attack the poor and impoverished only? Evidence points to an opposite conclusion. Dr. Crombie found, at Dacca, that it attacked all classes of society, except Europeans. Dr. O'Brien also found that Europeans and pure Khasias enjoyed a complete immunity; and that, with this exception, all classes suffered equally. Dr. Crombie was also of opinion that malaria was not a necessary element in its causation; and Dr. Smith concurred with him on this point. The scorbutic dyscrasia which is so prominent a feature in beriberi was markedly absent in this affection. Dr. O'Brien distinctly states that numerous cases occurred in which neither scurvy nor cold could be assigned as a cause. Even a latent scorbutic diathesis seemed to be absent in many cases. Weakness of the limbs, almost amounting to paralysis; oppression at the epigastrium; frequent vomiting; scanty, high-coloured urine (sometimes almost suppressed), which, according to Morehead, were all characteristic symptoms of

beriberi, would seem to be frequently, if not uniformly, absent in the condition now under review.

2. Is the disease contagious? Dr. O'Brien, writing from an experience of 200 cases, believes it to be as contagious as measles, scarlatina or any of the other infectious Exanthemata; and he thinks it probable that the period of incubation does not exceed three or four days. There is a prevalent idea that the affection is communicable from man to man. Could any member adduce positive facts for or against this conclusion? Is it true that numerous cases occur, in groups, within certain well-defined limits?

3. Are there any symptoms which may be regarded as pathognomonic of the disease? Is the œdema to be considered as a mere symptom and indirect result of some structural lesion, or has it a specific character, sequence and duration of phenomena so special that a general definition or description of it may be formulated? Are there any typically distinctive *prodromata*—such as malaise, vomiting, diarrhœa, diuresis, cough, &c.? Is fever an invariable concomitant? Is it primary, secondary, continued or intermittent? Could any member of the Society furnish a thermometric chart kept throughout the course of any such fatal case? Dr. O'Brien found that in several of his cases "there was no appreciable fever, and some of the individuals never had ague in their lives." In other cases the œdema appeared "after a few hours' fever," and sometimes "swelling was the first noticeable sign." Any similar experiences in the plains would be well worthy of record. Is the œdema constant in its seat? Does it, like cardiac dropsy and the œdema of enlarged spleen and splenic cachexia, commence in the most dependent parts of the body, and ascend? Probably not always. Unlike cardiac anasarca, it is commonly seen in the upper extremities. Does it ever lead to ascites, or to peri-cardial or pleuritic effusion? Nervous pains and sensations of "burning" are commonly experienced. Are these due to distension of the areolar tissue, or do they depend upon some neurosis preceding effusion? Do the joints participate in the swelling and pain? Sometimes they do, but probably not in the majority of cases. Discoloration of the skin has been described. To

what is it due? Is it entirely to be attributed to venous distension and turgescence, or can it be said to be connected with "disturbances of lymphatic circulation"? Does desquamation occur; and if so in what proportion of cases?

As regards the urine, its condition is of great importance. Dr. Cayley had been unable to discover "any trace of albumen." Dr. Smith's experience went to confirm this observation. Further information on this point is still much required. What is the condition of the heart? Palpitation and dyspnoea are common. Are they due to dynamic conditions, to altered structure, or to perverted innervation? Dr. O'Brien thought the dyspnoea might be due to sub-mucous oedema of the larynx. Dr. Smith is inclined to think that it is due either to change in the consistence of the muscular structure of the heart, or to cardiac dilatation. He (Dr. S.) observed that basic systolic murmur is by no means uncommon,—being particularly intense over the pulmonary artery, and at mid-sternum. Even dynamic systolic murmur at the apex, transmitted backwards as far as the vertical axillary line, but not audible at the angle of the scapula or in the left vertebral groove, is sometimes discoverable. This bruit is unaccompanied by any accentuation of the second cardiac sound over the pulmonary cartilage—that delicate corroborative sign of structural mitral reflux for which we are indebted chiefly to Skoda. Is the spleen always enlarged; and does this enlargement precede or follow the development of the oedema? What is the ordinary duration of the disease, and what are the phenomena of convalescence? All these are points upon which more light is needed.

4. Is the affection to be regarded as a trivial one, or the reverse? Dr. Payne, then Health Officer of Calcutta, writing of the disease last year, had not heard "of any results more serious than a troublesome and sometimes tedious affection of the limbs." Dr. McConnell was inclined to think that "it is fortunately a condition greatly amenable to treatment," and in his experience "the mortality seemed nowhere to have been large." Dr. O'Brien had met with several deaths. Dr. Smith believes the mortality will be found to be propor-

tionately very high, and he regards the disease as a very serious one indeed.

What is the usual cause of death? Dr. O'Brien had found œdema of the lungs and pneumonia. Thrombosis was referred to by Maurice Smith, while asthenia or sudden syncope seems to account for death not unfrequently.

5. What is the pathology of the disease? Is it a specific fever, of which the anasarca is merely a local symptom or sign? Or is the œdema a mere incident or accident of some other lesion? In other words, is it a scorbutic or malarious condition, or is it dependent on some cardiac, renal, hepatic, splenic, lymphatic or phlebitic affection? All this must be worked out by careful clinical observation.

6. What is the most suitable and successful treatment? Dr. Smith had found Digitalis, given with Dialysed iron, in full doses, very useful. Stimulants seemed to be necessary; and constant careful feeding. Applied locally, lead and opium often greatly mitigated the severe burning pain; and a hypodermic injection of $\frac{1}{80}$ th (one-sixtieth) of a grain of Atropia, combined with $\frac{1}{8}$ th of a grain of Morphia had also been found to afford great relief.

Lastly, Dr. Smith begged to ask: What was the experience of the members of this Society on all the above points? He brought forward these notes as mere jottings, but he hoped that they might, before long, elicit some precise and valuable information, and that the members of the Society would not only notify their past experiences, but that they would endeavour carefully to decide, by close observation in the future, all moot questions regarding this painful, distressing and dangerous disease.

Dr. NICHOLSON had seen four cases in the General Hospital—Eurasians. There was fever and œdema, but both to a slight extent. All the patients came from the same locality. There was no diarrhœa, and the swelling had been preceded by pain.

Baboo JUGGERNATH SEN had seen one case of the disease, and Baboo S. C. SURBADICARY had met with several among Armenians.

Dr. CHAMBERS inclined to think that the disease was infectious.

Dr. HARVEY stated that many cases were coming for treatment to the Alipore dispensary. The first case applied on the 19th of December, and 25 more came up to the close of the year. The disease was very prevalent this year. At Burtolah in Garden Reach there had been 60 cases and 15 deaths. Almost every patient affected with this complaint had an anæmic murmur.

On the motion of Dr. MOHENDRA LALL SIRCAR the discussion was adjourned.

Dr. K. MCLEOD read a paper "on the Association of fracture of the upper third of the ulna with dislocation forwards of the head of the radius."





THE CALCUTTA MEDICAL SOCIETY.

ON THE ASSOCIATION OF FRACTURE OF THE UPPER THIRD OF THE ULNA WITH DISLOCATION FORWARDS OF THE HEAD OF THE RADIUS.

BY SURGEON-MAJOR K. McLEOD, A.M., M.D., F. C. U.,

Professor of Surgery, Calcutta Medical College.

Two cases came under my observation last year which impressed me strongly. One was a recent instance of the fracture and dislocation, to whose association I desire to draw your attention, in which no difficulty was experienced in diagnosing and remedying the double lesion; the other was a remote injury of the same kind in which neither fracture nor dislocation had been reduced by the medical practitioner who treated the case, and in which permanent deformity and disability existed. The cases, for the notes of which I am indebted to Assistant-Surgeon Nitai Churn Halder, convey an important practical lesson which I shall endeavour to impress after relating them.

No. 1. Woomesh Chunder Bose, a child of 6 years, was admitted into the wards of the Second Surgeon, Medical College Hospital, on the 7th of June 1879.

History.—The father of the patient stated that on the morning of that day, at 9 A. M., the child had fallen (about an hour before admission) from the roof of a one-storied house about 15ft. high.

Condition on admission.—There were two contusions on the face, one over the right eyelid and another on the right cheek. The left ulna was fractured obliquely at about its upper fourth. There was a slight abrasion of the skin corresponding to the seat of the fracture on the posterior aspect of the limb. The head of the radius of the same side was dislocated forwards. The upper

fragment of the fractured bone was drawn considerably forward and outwards. The radius was reduced without difficulty, and on replacing it the displacement of the fractured ulna was rectified.

The child was quite sensible : the pupils dilated, the right one more so than the left. Pulse frequent and small. No injury of any other part of the body.

Result.—The broken bone united nicely, and the head of the radius was retained in proper position.

No. 2. Preo Nath Ghose, aged 28 years, came to the hospital for advice on the 6th of October 1879.

In the middle of June last, while he was riding, he received a kick from another horse passing by him. He sustained thereby some injury of the left forearm. A medical man treated the case by putting up the limb in two splints and bandaging.

Present condition.—There is a deformity about the upper and back part of the left forearm caused by a prominence at the lower end of the upper fourth of the left ulna—apparently the result of formation of callus after a fracture in this situation sustained in the manner described above. The olecranon is unusually prominent. The portion of the ulna above the seat of fracture is not in a line with the general axis of the limb, but is directed from above downwards, forwards and outwards. The head of the radius is out of its normal position, and is lying in front of the internal condyle and the supinator longus and flexor carpi radialis longior muscles. There is soft tissue round the head of the radius, apparently the orbicular ligament.

The power of the limb is a little deficient. The elbow can be flexed to a considerable extent (a few degrees short of the usual extent): it can be extended fully. He cannot himself fully supinate the limb, but by a little manipulation the supination can be completed. Pronation is not perfect.

In order to ascertain if possible the circumstances under which this double injury of the bones of the forearm takes place, I performed the following experiments on the dead subject:—

No. 1. The arm was pronated and placed on a table, the inner condyle of the humerus resting on the slightly raised ledge of the table. A large block was brought down edgewise on dorsum of forearm. The blow descended on the middle third; both bones were broken.

No. 2. The same arrangement. The blow descended on upper third, the ulna was broken obliquely; there was no displacement of radius.

No. 3. The lower third of the arm rested on a block; the forearm, pronated, on the table: a smart blow was delivered as in No. 2. The ulna was broken obliquely, and the head of the radius dislocated forward between the brachialis anticus and supinator longus and radial extensors of carpus.

No. 4. The same arrangement; same result as in No. 2.

No. 5. The same arrangement; the blow descended on the middle third: both bones were broken.

No. 6. The same arrangement; the same result occurred as in No. 3.

In these six experiments the double lesion in question occurred twice and under precisely the same circumstances, namely, by a direct blow on the upper third of the ulna, while the arm was supported on a block and the pronated forearm on the table. In two others under similar circumstances and blows, the ulna gave way, but the radius was not displaced; and in two others the blow descended on the middle third, and both bones were broken.

In the first of the two cases which I have related the precise manner in which the injury of the forearm

was sustained could not be discovered ; in the second case a kick delivered by a horse caused the fracture and displacement. One of the cases, in which the lesion was artificially established, on dissection, gave the following result :—

The ulna is fractured obliquely at the end of the upper $\frac{1}{6}$ th, radius dislocated forwards.

The hand is more pronated than before the fracture. The inferior fragment of the ulna is carried anteriorly and externally to superior fragment ; axis of fragments inclined to each other. Axis of upper fragment is inclined from behind forwards and inwards ; axis of lower fragment from within backwards and outwards.

Pronation is impaired ; supination abnormally free ; head of radius felt in front of elbow-joint.

Head of radius lies between brachialis anticus and supinator longus and radial extensors, and is covered by prolongation of fascia covering brachialis anticus muscle ; ext. cutaneous nerve, and the brachial artery lying in front of the head of radius. Lower fragment protruding beneath flexor profundus which it has partly torn. Anterior ligament of elbow-joint ruptured ; orbicular ligament intact, but embracing neck of radius ; supinator brevis lax ; flexor muscles tight.

Flexor profundus extensively torn by edges of fragments of ulna ; ulna broken about $3\frac{1}{2}$ inches below olecranon process and comminuted.

Head of radius, dislocated out of lesser sigmoid cavity, lying in front of inner condyle ; upper fragment of ulna pulled forwards and outwards by supinator brevis.

The deformity and disability which existed in Case No. 2 are explained by this dissection. The effect of the blow drives the fragments of the ulna forwards and dislocates the head of the radius, fracture of which is one of the rarest experiences in surgery, in the same direction. The supinator brevis and the

Oblique ligament, if it is not ruptured at the same time, pull the upper fragment of the ulna outwards. The supinating power of the biceps and the function of the supinator brevis are impaired by the abnormal position of the bones. There is, however, no mechanical obstacle to complete supination, and there is nothing to interfere with the action of the pronators. The ulna cannot be straightened until the radius has been reduced, on account of the manner in which the upper ends of the bones are connected by the oblique ligament and supinator brevis.

I am inclined to believe that the double injury which I have described has as much right to be considered a special fracture as Colles's fracture of the lower end of the radius and Pott's fracture of the lower end of the fibula. The manner in which it is caused is special and the resulting deformity and disability uniform and peculiar.

There are two points regarding the treatment of the injury to which I desire to invite special notice. The first is, that forward dislocations of the head of the radius are often difficult of reduction; and even when reduced it is occasionally impossible to retain the cup shaped head of the radius in its place.

Hamilton in his standard work on fractures and dislocations, mentions several cases in which reduction was not effected or maintained, and quotes such authorities as Denucé, Danyau, Robert, Sir Astley Cooper, Bransby Cooper, and Malgaigne to the same effect. In my case reduction was easy and permanent. I suspect that the manner in which the head of the radius leaves the lesser sigmoid cavity and the extent to which the orbicular ligament has been torn, determine the issue. In the dissection, report of which I have read to you, the ligament had slipped back on to the neck, and the anterior ligament of the elbow-joint had been rent by

the head. This rent might retain the head like a button hole or the orbicular ligament might slip off the head upwards or be lacerated, in each of which three events reduction and retention would be difficult.

The same author states that eleven out of 33 cases of fracture of the ulna were complicated with dislocation forwards or forwards and outwards of the head of the radius. This is strong evidence in support of the frequency of the lesion to which I am directing your attention.

He also mentions that he has seen seven instances in which the radius had not been reduced in an injury of this description.

It is curious to contrast the relative frequency with which the bones of the arm are broken at different levels. Hamilton's statistics are as follows :—

Bone.	Upper third.		Middle third.		Lower third.	
	No.	P. C.	No.	P. C.	No.	P. C.
Radius ...	3	2·9	6	5·9	92	91·2
Ulna ...	11	33·3	12	36·4	10	30·3
Radius and ulna ...	6	10	24	40	30	50

Agnew in his recently published work on Surgery gives the following statistics derived from the experience of the Pennsylvania Hospital during 24 years :—

Bone.	Upper third.		Middle third.		Lower third.	
	No.	P. C.	No.	P. C.	No.	P. C.
Radius ...	24	3·7	53	8·2	571	88·1
Ulna ...	82	57·3	32	22·4	29	20·3
Radius and ulna ...	39	12·5	147	47·3	125	40·2

The results agree very closely, and show—*1st*, that the radius is very seldom broken in its upper third ; *2nd*, that the ulna is pretty equally liable to fracture throughout its whole length, and, *3rd*, that when both bones are broken the fracture is much more frequently situated at the middle and lower thirds than at the upper.

The second practical point which I would urge may be didactically stated as follows :—

When you discover a fracture of the ulna at its upper third, examine carefully for a dislocation of the head of the radius and reduce it if possible.

THE CALCUTTA MEDICAL SOCIETY.

The second meeting of this Society was held at the Medical College on Wednesday, 11th February, DR. D. B. SMITH presiding.

The following gentlemen were unanimously elected as Honorary Members of the Society :—

SURGEON-GENERAL J. FULLARTON BEATSON, M.D., C.I.E.

SURGEON-GENERAL A. J. PAYNE, M.D.

DEPUTY SURGEON-GENERAL J. E. TUSON, M. D.

DR. K. MCLEOD exhibited a case which, as far as he could judge, was an example of one of the rarest injuries in surgery, namely FRACTURE OF THE NECK OF THE RADIUS. The patient, a boy æt. 14, fell from the branch of a tree, about 12 feet off the ground, about 4 months ago and injured his right elbow. The olecranon process was broken about $\frac{1}{2}$ an inch from its tip. Bony union had taken place. The external condyle of the humerus was perfectly healthy, and the head and about $1\frac{1}{2}$ inch of the radius could be felt *in situ*. At that point, however, the sharp extremity of the upper fragment of the bone could distinctly be felt. The remainder of the shaft of the radius had been pulled forwards and inwards by the biceps and pronator teres. Osseous union had taken place. Flexion and extension of the elbow joint could be voluntarily accomplished to some extent and passively almost to the full extent. Pronation and supination were very limited, and when this motion was made the head of the radius was felt to move not by rotation on its own axis, but by circumduction in the arc of a circle, of which the remainder of the shaft was the axis. This circumstance was considered to be a crowning proof of the injury diagnosed having taken place. Sir Astley Cooper denied the existence of this fracture, Malgaigne regarded the lesion as exceedingly uncommon, Hamilton believed it to be very rare and sometimes wrongly diagnosed during life. The present appeared to be a very clear case of the injury.

DR. MCLEOD also exhibited an EXOSTOSIS which he had removed from the lower end of the femur on the inner side of the bone just above the internal condyle. The patient, a carpenter æt. 25, had sustained a blow by a hammer 15 years ago at the site of the tumour. Inflammation followed, succeeded by a swelling which for long remained about the size of a hen's egg ; growth had been more rapid during the last two months. The mass was removed by a chisel and hammer under strictly antiseptic precautions, and the patient was making a good recovery. The preparation showed very well the cartilaginous nodular projections by which these exostoses grow. There were several of these on different aspects of the tumour separated by periosteum covered surface. Before the days of Listerism these exostoses were objects of dread to surgeons on account of the frequency with which their removal was followed by osteo-myelitis and pyæmia. Many surgeons preferred to amputate the limb, and all sorts of expedients, such as fracturing the pedicle and sawing it subcutaneously, were resorted to to diminish risk.

DR. MCLEOD showed a large FIBROMA which he had removed from the back of a young woman. It had originated from a blow sustained a year ago. The growth had been rapid, and at one part of the tumour a soft cyst-like cavity was diagnosed, which gave rise to some doubt as to the nature of the growth. It was, however, found to be encapsuled and innocent, and quite subcutaneous. The cyst turned out to be a large blood clot undergoing destructive change. This had been the starting point of the tumour which had grown more extensively in a downward direction.

The operation was performed antiseptically, and the patient was doing well.

DR. MCLEOD also exhibited a drawing which compared instructively with that which DR. SMITH had shown at the last meeting. A young woman, suffering from dysmenorrhœa, exhausted the air out of a brass *lotah* by burning a small oil lamp in it and placed the vessel on the lower part of the abdomen for the purpose of dry cupping the part. The abdominal walls entered the cavity of the *lotah* and could not be with-

drawn until the bottom of it was removed. The hernia was then reduced and no unpleasant consequence followed.

DR. BOWSER said that dry cupping in this manner was a common practice among natives. It was known by the names of *guti boshun* and *gar boshun*.

MOULVIE TAMEEZ KHAN and BABOO KANNY LOLL DEY had both seen similar cases in which holes had to be drilled in the bottom of the *lotah* before it could be removed.

BABOO BHOOBAN MOHUN SIRKAR remarked that earthen vessels were now used for the purpose.

DR. NAYLOR related a case in which, though the top had been removed, the pot could not be taken off. It had to be sawn through.

BABOO BIPIN BEHARI CHAKRAVATI said that dislocation of the navel—*nar khola*—is assigned as a cause of abdominal trouble of various kinds and treated in this fashion.

DR. SMITH observed that the subject was a most interesting one, and any member of the Society collecting the facts regarding this curious practice and placing them in a systematic shape, would confer a benefit on the Society.

The ADJOURNED DISCUSSION on ACUTE ŒDEMA, "the new disease," was re-opened by Baboo RAKHAL DAS BOSE, who described a case which had fallen under his observation.

The patient, an adult male residing at Soortee Bagan in Colootollah, was attacked about a fortnight before he saw him. He had had no malarious fever for four years. The attack commenced with a chill. The legs and wrists then began to swell, and this swelling was accompanied with pain in the parts. The urine was of low specific gravity (1005 to 1010). It contained no albumen. There was neither cardiac murmur nor venous pulsation. The pulse was slow (54), and the interval between the beats specially protracted. The temperature was sub-normal (96° in axilla and 97·1° under the tongue). There was dyspnoea, and the patient was anæmic. The bowels were confined. The patient was first treated with purgatives and iron. A native preparation, of which the following is the formula, was next tried. *Punarnavashtaka*. Take of *Boheraavia diffusa* (Punarnava) root, *Melia Azadirachta* (nim) bark, leaves of *Trichosanthes*

dioica (palta), ginger, *Picrorrhiza kurroa*. (katki), *Chebulic myrobalan* (haritaki,) *Terminalia chebula* (guluncha), *Tinospora cardifolia*, and wood of *Berberis Asiatica* (daru haridra), a quarter tola each, water thirty-two tolas ; boil together till reduced to one-fourth. This is given in general anasarca, ascites, cough, jaundice, &c. This medicine acted as a laxative and purgative, and in four days the œdema disappeared.

DR. CAYLEY remarked that some difference of opinion existed regarding the gravity and fatality of the complaint. He himself, from his earlier experience, at first thought the affection a trivial one ; but later observation had induced him to change his opinion. Last week he had been called in to see a case at Bhowanipore. Three deaths had already taken place in the family. Another was extremely ill, died next day, and two more were in a dangerous condition. There was very great dyspnœa, but he could detect no cardiac murmur.

DR. JUGGOBUNDHOO BOSE saw some 20 cases in the latter months of 1879 near Sealdah. The disease attacked 2, 3 or 4 members of the same family. He had, however, seen a single case in a family at Kidderpore. Two girls and a boy had been brought for treatment to the Sealdah Hospital—all suffering from this complaint. There was no albumen in the urine nor casts. There was great dyspnœa. The heart's action was very rapid, but he could detect no abnormal sound. DR. BOSE has always found this œdema associated with very high fever with exacerbation towards evening and remission in the morning. He had seen a female suffering from high fever, great dyspnœa and pain all over the body. He treated the case with the Tinctures of perchloride of iron and digitalis combined with diuretics. One case had died suddenly. Another had a redness of the skin like Scarlatina which preceded the swelling. He had seen a second case with this discoloration of skin. He considered the disease to be endemic and not infectious. It affected several or all of the members of a household simultaneously or nearly so. He knew an instance in which three people brought from a distance came and resided at Sealdah. None of the people in the locality were affected.

BABOO KANNY LOLL DEY had treated several members of

a family affected with this disease. Two children labouring under the disease had been brought from a distance, and the others got the disease after the arrival of the children. There was no similar disease in the neighbourhood at the time. Three of those seized had died—including one of the children. The urine was of low specific gravity, but contained no albumen nor casts. There were traces of urate of ammonia and phosphates. Œdema was the first symptom, first of the feet and hands, then of the legs, thighs, buttocks and abdomen. Acupuncture was resorted to.

Death in the fatal cases was preceded by dyspnoea. Treatment consisted of diuretics—nitrate and acetate of potash, spirit of nitric ether and buchu. Milk diet was given.

DR. BOWSER saw the disease in 1877 in the South of Calcutta in a wealthy Mahomedan family living near the old Park Street Cemeteries. He heard then that many people (natives of the poorer classes) were ill with the same complaint in the adjoining *bustees*. A month ago he saw several cases in the same family, a Eurasian household in Goristan Lane, numbering 19 members, aged from 50 years down to 3 or 4. The first victims were two old servants living in a godown, then a lad of 16 got it, who occupied the same room as two brothers—14 and 11—who were next seized. Then the mother and daughter occupying a separate room were seized—seven in all. The first case occurred about four weeks ago. The family was in comfortable circumstances, and the house was not damp. The family came to reside in Goristan Lane two months ago.

The symptoms were :—Œdema of feet to knees, of scrotum in one case ; no loss of appetite ; temperature, pulse &c., natural ; constipation ; no fever ; a little pain towards evening when the swelling increased. The cases were treated with salines, diuretics and bark. Some were well and others convalescent.

DR. NAYLOR saw five patients in the same house ; they were Mahomedans, and belonged to the poorer class. There were two daughters, two servants and an old man, the latter died suddenly. The women suffered from dyspnoea and bronchitis, and the old man had congestion of the liver. The young members of the family recovered. The house was in Goristan

Lane. Dr. N. thought the disease was due to endemic causes, but there was a strong impression that it was infectious. He advised the people to leave the house; but it is a custom among the Mahomedans not to leave a house for 41 days after a death has taken place in it.

DR. D. B. SMITH stated that he had at present two cases (of acute oedema) under treatment in the College Hospital,—one of them from Goristan Lane, where the disease would appear to be prevailing severely. Both cases presented cardiac bruit (systolic), heard very distinctly over the pulmonary cartilage, at mid-sternum, at the ensiform cartilage and over the mitral apex. In one of these cases there was not only a tricuspid *bruit*, but *distinctly visible venous pulsation, and venous “hum” on both sides of the neck*,—also Richardson’s sub-clavian murmur on both sides. In this case there was slight purple discoloration and softening of the lower gums, without actual sponginess or ulceration. The venous hum and pulsation had not been observed before, in any case, by Dr. Smith. He further observed that the prevalence of the disease seemed, on the present occasion, to have been first noticed at Bhowanipore; afterwards about Kidderpore and Alipore; and latterly towards the Circular Road end of Park Street. It will be interesting to note if the disease should now spread still more to the west and north.

DR. HARVEY remarked that, although he had seen very many cases since the last meeting, he had not been able to have any one case under observation throughout, neither had he been able to see one examined post-mortem. His remarks then pretended to no scientific precision, but, like those of Dr. Smith, were notes. In 1878 he had seen a number of cases at Bartolah and elsewhere. He would read a passage extracted from his annual report of the dispensaries of the 24-Pergunnahs for 1878, which represented what he knew of the disease at that time.

“The only enquiries relating to special diseases were into the nature of what is described as a new disease known to the natives as *pao phoola* (swelled feet) from its principal symptom. Dr. McConnell after careful investigation reported that it was not at all special or peculiar; that its essence was inter-

mittent fever with great anæmia, exhaustion, œdema of the feet, or in some cases, of the upper limbs and neck or even general dropsy occurring in persons reduced to low health by insufficient or improper food ; and to the effects of damp and cold upon such enfeebled persons. He attributed the unusual prevalence to the excessive dampness of the season and the great dearness of food. On a subsequent occasion I investigated the details of an outbreak at Bartolah, where a large number of persons were reported to have died. My conclusions agreed in the main with those of Dr. McConnell. The disease seemed to me to be the so-called Beri-Beri pure and simple, in an acute instead of a chronic form. The absence of albumen points to some source other than disease of the kidney—some affection of the lymphatics or blood-vessels perhaps ; but the disease requires further careful study. The cases seen by me had all become convalescent or chronic. In many but not in all there was malarious cachexia ; in many but not in all enlarged spleen ; in all there was distinct anæmia ; in several anæmic bruit in the heart and large vessels. One curious point was noticed,—*viz.*, that rich and well-to-do people, well fed and living in elevated and very dry houses, had been attacked quite as freely as poor and ill-fed people living in damp huts on the ground level. The villages, it is true, were honeycombed with tanks and waterholes, but most of the houses in which cases had occurred belonged to tailors and were well-raised, matted and perfectly dry. In one family consisting of father, mother and two sons, with limited earnings amounting to Rs. 36 per month, the father and two sons had died and the mother was in a dangerously feeble condition. She assured me that there had been no change in the mode of living in consequence of the prevailing high prices, and that they had always had plenty of good food. Several other persons told me the same story, and one very intelligent man informed me that the richest men in the village had suffered equally with the poorest, and that very many persons had died of the disease. The proprietor of a private dispensary said he had treated 11 cases with only one death, and that it was a curious fact that the disease was confined to Mahomedans. He had only seen

one Hindu affected,—an observation promptly met by my intelligent friend by the statement that as there were not 5 per cent of Hindus in the village, it was evident that Hindus suffered more in proportion than Mussulmans.”

DR. HARVEY added :—

My experience this year has been of a similar nature. The only constant condition which I have found has been anæmia. Many have suffered severely from fever, many have had large spleens, a few have been scorbutic or at least have had soft and spongy gums. Many have suffered from semi-starvation, and have lived on the ground level in damp huts. But some have had no fever or spleen ; have had perfectly healthy gums ; have lived on good food and in dry houses, so that, while we may admit all these causes to be probable predisposing causes of the disease, we can hardly claim them as essential factors. Whether the anæmia which so far I have invariably met with, be a cause or a consequence I can as yet give no opinion ; it may very likely be a consequence. What the ultimate pathology and etiology of the disease may be remains to be worked out ; but that the disease is Beri-beri, as described by Marshall in Ceylon and Hamilton in Ganjam, I have very little doubt, nor have the assistant-surgeons who saw the disease in Madras when there on famine duty. The fact is, that a considerable number of separate diseases have been included under the name Beri-Beri. Dr. Ranking took it to be a form of acute albuminuria. Dr. Morehead scurvy, and several observers have confounded it with cachectic dropsy. It has also been confounded with Barbiers, a disease resembling it in some respects but differing from it in many others. If you take Dr. Aitken's definition of the disease, you will see how closely it resembles what we have seen of it here—a constitutional disease expressed in the first instance by anæmia culminating in acute cedema and marked by stiffness of the limbs, numbness and *sometimes* paralysis of the lower extremities, oppressed breathing, anxietas in paroxysms, a swollen and bloated countenance. Urine secreted in diminished quantity. The cedema is general not only throughout the connective tissue of the muscles, but the connective tissue of solid and visceral organs, in every cavity of the body, is bathed in fluid

and effusion of serum into the serous cavities themselves very generally precedes deaths. The only point of difference which my cases have exhibited has been that as a rule the urine has appeared to be but little diminished in quantity. In a few however it has been so, and in one case there was a small quantity of albumen. In two cases there has been an approach to paralysis of the lower limbs as if from effusion of serum into the spinal canal, and in a good many more there has been great difficulty in walking, apparently not due to paralysis but to the local condition of the limbs. I have said that the disease has often been confounded with Barbiers, and as paralysis is very frequent in that disease, I think that perhaps the comparative absence of paralysis in our Calcutta cases may be explained by this means.

Examples of the confusion caused by the inclusion of numerous distinct types of disease under one name abound in the printed accounts of the disease. Aitken tells us that Madras is the southern limit of the disease in India. It occurs however, or has been described as occurring at Coimbatore and other districts south of Madras. He says that it does not extend further from the coast than 40 to 60 miles, and in the same paragraph that it prevails at Cadapah 100 and at Belari 200 miles from the sea. I believe these statements to be perfectly reconcileable. The disease, as I saw it at Belari and Cadapah, and as I have also seen it in Central India and Rajputana, is by no means the same disease as we have here, or as Marshall and Hamilton describe. The one is exceedingly chronic, and the swelled feet appear at the end of a long train of symptoms; the other is at first essentially acute, and the swelling is often the earliest symptom.

Take a case which I saw a few days ago. The patient, a Policeman at Diamond Harbour, where he says the disease was *not* prevalent, had fever for one day, remained well for two days, and then found himself swelled all over. When I saw him 13 days after, the swelling had greatly diminished and he was convalescent, but considerable oedema remained in the legs and feet, and there was puffiness of the wrists and

face. He was anæmic, but persisted in saying that he had been quite well until the fever began.

I think then that we are justified in considering the disease to be the same as that described by Marshall and Hamilton—a disease hitherto considered to be endemic on the littoral of the Northern Circars and supposed not to extend. The Shillong epidemic, however, seems to show that the disease may occur far away from the sea and at an altitude of 5,000 feet. Why it should have developed itself in Calcutta within the last three years or so remains to be seen, but I have heard one hypothesis which is certainly incorrect, *viz.*, that it was brought by the Madras troops. This was not the case, for the disease was common before a single Madras Sepahi had arrived, and none of the Regiments I am told brought any cases with them. This of course does not invalidate the theory of importation, but only that particular source. So far as I can gather the disease does not appear to be considered contagious in Madras, but the idea of contagion is certainly gaining ground here, and is as you know strongly held by Dr. O'Brien of Shillong. I confess that, although I am not yet convinced that it is contagious, there are a good many examples which point in that direction. Here is one. A maid servant in Chaker Ber Road, Baliganj, was in the habit of visiting her friends in Bhowanipore, some of whom were suffering from the disease. She was suddenly attacked herself, and when seen by me about a month after, presented a typical instance of the disease, her feet, forearms and face were swelled, though less so than they had been; there was marked anæmia including a murmur at the base and along the neck; no scurvy; pulse 140, temp. 102-8°: great dyspnœa. There were 9 other inmates in the house. About a week—the people were very hazy as to dates—after she was attacked they began to get it, and every one took the disease. Two of these were servants, whom I did not see, but I saw all the others, and in every case the disease was well marked. All had much stiffness and numbness of the limbs with burning and itching sensations but no paralysis. None had scurvy, but one—a child of 8—had slightly swollen gums. All were anæmic, but one—a child of 12—was very slightly so. Three had systolic murmurs,—

in two cases confined to the base, in one at both base and apex, and one, as already stated, in the veins of the neck. Two more were said to have had murmurs, but these had disappeared, although the other symptoms remained well marked. Two cases were convalescent, and had neither cough, dyspnoea nor increased temperature. The temperature in the others was 99, 100, 100·9, 101, 101 and 102·8°. In one case diarrhoea had come on 5 or 6 days after the swelling began, but had ceased after a few days. In one there was existing dysentery, and in three there was marked oedema of the lungs and great dyspnoea, 36, 62 and 70. In one, where the dulness extended up to the angles of the scapulæ, there was a severe racking cough with prune-juice expectoration. The whole body up to the margin of the ribs was hard and brawny and mottled, blistered in one or two places over the hip from extreme tension. In this case also diarrhoea succeeded the swelling, and was still going on. Her urine was described as pretty free and contained no albumen. The cases were all affected within about a week of each other. I could quote, though not in such detail, several other cases where several members of the same family were attacked, and in the village of Bartolah, previously alluded to, more than one each. Whether they are more than coincidences I will not pretend to say, but it looks a good deal like contagion.

So far as treatment goes I have little to say. It is most disheartening to see a case once or twice only and be unable to watch the effects of treatment. Hitherto I have been content to prescribe for urgent symptoms, and as anæmia and dyspnoea are almost always present, I have largely used iron and digitalis—with, as I think, good effect. Dry cupping has proved useful, so has ammonia and bark. I may mention that in most cases the skin seems to act freely, although in one or two it has been dry and rough.

DR. MCLEOD said that, as Health Officer of Calcutta, he had made special enquiries regarding the disease. He had collected returns through the agency of the police, and had personally visited the affected parts of the town and seen and examined a large number of cases. The disease appeared to have been entirely confined to the Southern and Eastern Suburbs during

1877 and 1878. Previous to these years it does not appear to have existed in or near Calcutta. This might be stated with tolerable confidence. The town itself was not invaded till the year 1879, and the disease was still confined to the southern parts of it—to the Police Sections of Bamun Bustee, Park Street and Collingah. A few cases were reported from other Sections, but they were imported. The affected parts were either continuous with, or contiguous to, the portions of the suburbs where the disease had prevailed in the preceding year and still prevailed. The malady had broken out after the cessation of the rains in the months of November and December, and very few new cases were now occurring. The outbreak had taken place almost simultaneously in different houses of the same village or *parah* or among different members of the same family. It was curious how the cases were grouped in households. A single case in one house was rare, most usually several or all the members of the family were attacked simultaneously or in rapid succession. The infected houses were not grouped in the same way, but were scattered throughout the infected villages. He had examined carefully into the sanitary condition of the infected villages and houses, but had been unable to discover any special insanitary circumstances, personal or otherwise, associated with the outbreak of the disease. There were many filthier places in the town and poorer people than these. The disease had undoubtedly caused considerable mortality. The town returns showed 266 cases and 51 deaths, and the suburban 364 cases and 163 deaths.

As regards the symptoms of the disease, the evidence which he had collected tended to reveal considerable variation. Fever sometimes preceded and sometimes succeeded the swelling, and sometimes did not occur at all. It seemed to be of quotidian type when present, and well-marked rigors ushered in the attacks. Bowel complaint was less common, but diarrhoea occasionally was the first symptom, more generally it occurred in course of the disease, and in a small proportion of cases dysentery supervened. The œdema was certainly the most constant, and apparently the essential feature of the disease. It was preceded by burning and painful

sensations which seemed to be confined to the skin and soft parts. Pains in the bones and joints were rare. Dyspnœa and a certain amount of bronchitis were present in all but very mild cases. The breath sounds were harsh; the heart very irritable, but a positive murmur had not been detected. Death, when it occurred, would seem always to be sudden and associated with dyspnœa. The disease lasted for two or three months in well developed cases, and caused great anæmia, wasting and prostration. In a few cases the gums were rather swollen and bled when the teeth were cleaned. In one case, that of a very young child, necrosis of the upper jaw had occurred after inflammatory swelling. Neither an anæmic nor scorbutic condition appeared to be an essential precursor of the malady, though a certain degree of both dyscrasiæ seemed to be developed in its progress. The skin had been carefully examined, and in only one case was any abnormality found. This was a claret-coloured discoloration of the legs disappearing on pressure. The general opinion among natives was that the disease was not infectious.

DR. NICHOLSON had seen 6 cases in the General Hospital, all from Goristan Lane. They were all profoundly anæmic. There were purpuric spots in one case. There was great palpitation of the heart, the same as in chlorosis. Dr. Nicholson thinks that the dyspnœa and cardiac symptoms are due to an anæmic condition of the blood. Two of the cases recovered perfectly and the others were doing well.

DR. JOUBERT saw a case 15 months ago in the person of his *durzi*. He lived beyond Kidderpore Bridge. There was no albumen nor cardiac murmur, the disease seemed to occasion him little inconvenience.

The discussion was by common consent adjourned to the next meeting.

BABOO LALL MADHUB MOOKERJEE read "*Notes on Loss of Vitreous after Cataract extraction.*"

DR. CAYLEY complimented the author on his very interesting paper and on the instructive way in which the statistics of the Ophthalmic Hospital had been utilized. He would not go so far as to say that loss of vitreous was a desir-

able event in cataract extraction ; but he was in a position fully to support the author in his opinion regarding its harmlessness when the accident did occur.

DR. MCLEOD read notes of recent successful cases of Ovariectomy performed by DRs. PILCHER, CAYLEY and HARVEY.

The following are the particulars of Dr. Pilcher's case which occurred in the Howrah General Hospital :—

Raboty, aged 35 years, was admitted into the Howrah General Hospital on the 11th of May 1878 with a tumour situated in the left side of her abdomen. She had always enjoyed good health till about 17 months before admission, when the catamenia ceased and she noticed a swelling of the left side of her abdomen which has steadily increased, attended with intermitting shooting pains. She has never been pregnant.

On admission the abdomen was found distended by a uniform, smooth, tense globular tumour which reached to the ensiform cartilage ; it was dull on percussion, slightly movable and without fluctuation. The tumour inclined slightly towards the right side ; there have been occasional fever, but the pain and discomfort has been such for the last 11 days as not to allow her any rest ; the pain is all over the abdomen and over the sacrum. There is a dark areola round the nipples of both mammæ, out of which milk oozed on pressure.

Examination per Vaginam.

Uterus low, small cervix freely movable, directed to the left ; left vaginal cul de sac healthy. Tumour could not be reached. The right vaginal cul de sac admitted the finger, reached the uterus, which being pressed on came in contact with the tumour. Uterine sound passed readily to 3 inches, its point being directed slightly to the right and behind the tumour ; movement of body of uterus limited.

Measurements.

Anterior superior iliac spine to the umbilicus right side, 10½ inches.

Anterior superior iliac spine, left side, to umbilicus, 12 inches.

Pubis to umbilicus, $9\frac{3}{4}$ inches.

Girth at umbilical level, 45 inches.

On 19th May 1878 an operation was performed under chloroform by Dr. Pilcher assisted by Dr. Charles. An incision was made four inches long in the middle line commencing two inches below the umbilicus downwards to the pubis; the structures were carefully divided till the peritoneum was reached, which was taken for the cyst and separated from the transversalis fascia, all bleeding points being secured by carbolized catgut ligatures. The peritoneum was afterwards divided, a large trocar pushed into the tumour, which was emptied of its fluid, and then by the aid of a strong pair of vulsellum forceps withdrawn from the abdomen; there were no adhesions. The pedicle was very short and about two inches broad, and was tied in four parts by strong silk ligatures, divided, and peritoneal cavity sponged with carbolic lotion. The wound was then closed by silver wire sutures which were inserted about an inch apart, passing completely through the abdominal walls and peritoneum at some distance from the edges of the wound. The surface was then dressed with pieces of lint soaked in the Tincture of Benzoin, covered with cotton and supported by a broad abdominal bandage.

The cyst was not weighed, its length was 13 inches, breadth 12 inches, one inch thick, and contained 240 ounces of thick dark brown fluid.

The patient suffered considerably from gastric irritability and sacral pain on the night after the operation, but no abdominal pain was complained of during the whole period of the after-treatment and convalescence.

The stitches were removed on the fourth day following the operation, the wound was found to have healed except a small portion above the pubis, which remained open and through which discharges escaped, and pus from between the muscular walls on each side of the wound found exit.

The temperature at any time never rose more than 101° and that on the day after operation; her convalescence was most satisfactory—no untoward symptom arose, and she was discharged quite well on the 12th of July 1878.

After recovery the measurement was again taken.

Circumference of abdominal umbilical level	...	39	inches.
Pubis to umbilicus	...	7½	"
Ensiform cartilage to umbilicus	...	6½	"
Right side, umbilicus to ant. sup. iliac spine	...	8½	"
Left side ditto ditto	...	8½	"

I saw the women in the bazar with a *kulsee* of water on her hip three days ago. She is well in all respects.

DR. CAYLEY'S case has already been reported in the June (1879) number of the *Indian Medical Gazette*.

The report of DR. CHARLES'S case has been prepared by Baboo BEHARY KRISHNA BASU, Goodeve Scholar.

Abstract Statement of the Case of Mrs. L. Patton, on whom ovariectomy was performed on the 4th December 1879.

Previous history.—Patient, an East Indian aged 45 years, is married 30 years, and is the mother of nine children. The last child was born six years ago; has been suffering from a painful swelling of the hypogastrium for the last one and a half years. The tumour was aspirated on the 26th August 1879, and about 3½ soda water bottles of a light green fluid came away. Has been treated also for menorrhagia.

Condition on admission.—Tumour measures 9 inches across transversely and 7 inches vertically; it reaches from the pubis to half way between the umbilicus and ensiform cartilage: bowels constipated: no fever: last menses ceased on the 26th November 1879 after a duration of nine days. Sp. gravity of urine 1014, reaction acid; contains no albumen. Ordered to take Tr. Ferri and Tr. Digitalis a. a. ℥x. three times a day.

Ovariectomy.—Patient was placed under chloroform and Dr. Keith's double steam spray, with a solution of thymol (1:1000) was used and kept working continuously throughout the operation. A large McIntyre's waterproof sheet with an opening 7" × 6" in its centre was placed over the abdomen to prevent unnecessary soiling of the clothes and her body, Emp. Resinæ was spread over all round the circumference of the opening for about an inch. The bladder was emptied by a catheter. An incision 4½ inches long was made in the line

corresponding to the linea alba from the umbilicus to about 2 inches above the pubes. The subcutaneous fat with the muscular aponeurosis was then divided, and until the peritoneum was reached, the sub-peritoneal fat was recognised, which was divided on a grooved director. When the sac was thus exposed, it was found to be of a brick-dust colour, so much resembling muscle that a doubt arose as to whether the last structure had been really the peritoneum. A cautious puncture was made into the sac, when a little fluid escaped; a sponge, made antiseptic with thymol water, was placed near the opening to absorb the fluid. A finger was passed within the sac, when the villous inner surface of the cyst was recognised, Dr. Spencer Wells' pistol trocar was then introduced to draw off the fluid as there was a slight oozing by the side of the trocar; the opening was secured by tightly tying a carbolised whipcord round the cyst wall and the trocar. The cyst was then pulled out gradually by separating its exterior adhesions with the parietes of the abdomen, the omentum, coils of small intestine, and the fundus of the uterus, by gently scraping with the nails. The pedicle was long and narrow, and was seized with a cautery clamp. The cyst was removed by cutting the pedicle through about $\frac{1}{2}$ an inch above the clamp with a scalpel. The cut surface was thoroughly *seared* by the application of a small cautery, heated by a spirit blow-pipe at dull red heat. The clamp was loosened, and when it was seen that there was no oozing of blood, the pedicle was allowed to drop into the abdominal cavity. The cavity of the peritoneum was cleansed in every direction by antiseptic sponges. The amount of blood removed was trivial, consisting chiefly of small firm clots. The application of a thymol sponge to the numerous soft adhesions that were torn across, seeming to arrest at once the free capillary hæmorrhage which took place; so prompt was the styptic action that no attempt was made to apply a ligature, or other means of arresting hæmorrhage to any of the bleeding points, which were so numerous as to be practically uncountable. The omentum was carefully spread over the intestines. Eight deep sutures of silver wire were applied which passed through the peritoneum, a sponge was

placed below the wound to absorb any bleeding from the punctures, and several superficial sutures of silver wire were applied. The wound was dressed by Boracic acid ointment and Boracic acid lint, and a broad bandage of flannel was rolled round the abdomen. The cyst weighed one pound. "Its wall is very thick in parts, not less than $\frac{1}{8}$ inch. Its outer portion is firm, tough and leathery, consist of well formed fibro-elastic tissue. The inner portion is soft, separable into layers, laminated and consist of fibrinous matrix, and undergoing organisation, in parts quite soft, granulation tissue in others, showing incipient fibrillation, and the presence of numerous small capillary vessels. Bands of similar soft fibrinous material pass in various directions between the walls of the cyst, dividing it into imperfectly defined and varying sized loculi."

Subsequent progress.—Two hours after the operation the temperature rose to 102° F. 20 grains of the Salicylate of soda were administered, which the patient brought up immediately. Morphia suppositories were introduced into the bowel immediately after the operation, and every 6 hours to alleviate pain. A tea-spoonful of water was given frequently for two days and a gum-elastic catheter was passed into the rectum occasionally to allow the flatus to escape, from which the patient suffered often. The first dressing was changed after four days under the antiseptic spray, and the parts were found firmly united, except the margin of skin for about $\frac{1}{2}$ an inch at the upper part of the wound on the right side which overlapped a little, and was not in accurate apposition with the opposite cut surface. Not a single drop of pus was met with. After this the dressings were changed every second day under the spray. On the 7th day after the operation, the sutures were removed and two strips of adhesive plasters, each about 2 inches in breadth, were placed round the abdomen, but they irritated the ununited margin of the skin, and at the next dressing from 4 to 6 drops of pus were found at this point. To prevent the continuance of this irritation, the plasters were cut short an inch on each side of the cicatrix and the two pieces were drawn together by carbolised silk thread passed through small rings attached to the ends of the plasters.

On the 21st day of the operation a small superficial abscess formed near the lowest stitch,—by poulticing the same a little pus escaped through a small opening, on the line of union, the size of a small pin's head, which after discharging a little thin sero-pus, healed up the next day. The temperature on the third day of the operation became normal and kept so all along; no other abnormal symptoms occurred. The patient gradually recovered, and left the hospital on the 16th January 1880, 37 days after the operation.

Diet.—On the 2nd day after the operation only a bottle of soda water and 2 lbs. of ice were given; on the 3rd day chicken soup, and on the 4th day two eggs along with chicken soup were ordered. On the 6th day rice-pudding was given, and on the following day bread-pudding. After this she took meat and any food she relished.

DR. CAYLEY observed that since the case, which he had reported in the *Indian Medical Gazette*, had occurred he had another in which adhesions of so firm a character had existed between the tumour and the pelvic organs that extirpation of the uterus became necessary. The woman died.

DR. CHARLES had also had a more recent case in which cancer of the intestines was found to exist. She died next day.

DR. SMITH observed that it seemed to be the custom with ovariologists to proceed to operation without having previously tapped. He believed that a preliminary tapping would often reveal prohibitory conditions. It was very desirable that all cases, fatal as well as successful, should be placed on record.

The following gentlemen have become members of the Society:—

Baboo MOHENDRA NATH BISWAS, L.M.S.

„ PRONATH MOOKERJEE, Vern. Lic.

„ MONEY LALL DUTT, L.M.S.

„ BRAGENDRA NATH BANNERJEE, L.M.S.

„ RAM MAY ROY, L.M.S.



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THE CALCUTTA MEDICAL SOCIETY.

NOTES ON LOSS OF VITREOUS AFTER CATARACT EXTRACTION.

BY ASSIST.-SURGEON LALL MADHUB MOOKERJEE, L. M. S.

[Read before the Calcutta Medical Society.]

The subject on which I propose to address you has been long regarded as one in which a satisfactory conclusion one way or other has been considered of the greatest importance in all operations for the removal of cataract. Till recently all the oculists of the United Kingdom and the Continent were unanimous in opinion as to the bad effects of loss of vitreous. This fact is borne out by the records of ophthalmic literature of some ten years ago. Later communications on the subject, however, show the leaning of the profession to a contrary opinion. I am glad to find that the view now generally accepted, is what Dr. Macnamara urged so far back as 1868.

In the proceedings of the Clinical Society, published in the *Lancet* some five years ago, Dr. Macnamara remarked upon the comparative harmlessness of the loss of vitreous after operations for cataract, but he was stoutly opposed at the time by surgeons at home. My experience on the point has always been in accordance with Dr. Macnamara's view, and it is my intention to lay before you for your consideration, within the brief space of 20 minutes allowed to me by the rules of the Society, the facts that have come under my personal observation corroborative of the view.

I may in the first place premise that the opinion which Dr. Macnamara formed is held by his successor Dr. Cayley, about whose experience and knowledge it would not be proper to speak, and that it is also borne out by the records of the Calcutta Ophthalmic Hospital. Dr. Macnamara wrote in his well-known work on the "Diseases of the Eye," that "the

loss of a small quantity of vitreous does no harm, and that even a fourth of the vitreous may be lost and yet the patient make a very good recovery." And also in the able article on "Notes on Operations for Cataract," in the "Indian Annals" published in the year 1875, Dr. Cayley writes thus:—"This does not seem to do any harm, although generally looked upon as a dangerous complication, and one especially to be avoided. From my experience of a considerable number of cases I look upon a slight escape of vitreous of very little consequence, and I think when lens and capsule come out entire and a little of the vitreous follows, the section heals more quickly, and there is no greater liability to iritis or other complications, and that recovery is more rapid than when this does not occur. It may be that the union of the section is favoured by the diminished intra-ocular tension. I have never found any impairment of after vision from such slight escape of vitreous."

From the records of 926 cataract operations conducted in the Ophthalmic Hospital, I find there was loss of vitreous in 122 cases.

Of the 122 cases the methods of operations followed were:—

1st.—Upper section with iridectomy but no laceration of the capsule in 99 cases.

2nd.—Macnamara's operation in 21 cases.

Lastly.—Lower section with iridectomy and laceration of capsule in two cases.

In the 122 cases referred to, 89 recovered good vision and five a fair amount of vision, and in 28 cases no amount of sight was restored.

The causes of failure in the above 28 cases were,—

Ten lost sight by subsequent iritis ending in closure of the pupil, and in nine cases the eyeball got atrophied. In eight cases the cornea sloughed, and in four of these panophthalmitis occurred, ending in the formation of abscess of the globe. It may be here noted that of the 28 unsuccessful cases, in five cases the vitreous loss was very large, and in 23 less than a fourth.

With regard to the quantity of vitreous lost in the 122 cases,

in nine there was slight oozing. In 91 cases the loss was less than a fourth of the whole humour, and in 22 cases the loss was more than a fourth; in some of these almost the whole of the vitreous escaped.

It will be evident from the unsuccessful cases that where vitreous was lost, the quantity so lost had very little to do with the result of the operation. For instance, where the largest quantity was lost, as in the above-mentioned 22 cases, 17 were cured and five only were unsuccessful, so that the percentage of success was 77.

But of cases where the loss was less than a fourth, as well as those in which vitreous only slightly oozed out, 72 were successful,—good vision resulting, and five were partially successful.

Of the total number of 926 cases, 737 cases were successful, the patients regaining good sight. In 34 cases the sight was restored partially, *i. e.*, the patients gained some amount of useful vision, and in 155 cases the result was unsuccessful; this would show 84 per cent. of cure, but it has been shown before that the percentage of cure in cases where the vitreous was lost was 77.

Out of the 926 cases, 113 were of soft cataract, and in them there was no loss of vitreous in the operations for their removal.

From my experience I have found that loss of vitreous as a complication generally occurs in operating upon the second eye when the first eye has been spoiled by maltreatment by mals or quacks.

In these cases not only is the vitreous fluid, but generally all the structures of the eye are of low vitality, leading usually to the escape of vitreous and sloughing of the cornea.

In very prominent eyes, unless the patient is thoroughly under the influence of chloroform, the operation is usually attended with loss of vitreous. In cases where the section is more sclerotic than corneal, where the patient has spasm of the ocular muscles, whilst the lens is being evacuated, the vitreous is very apt to escape.

The records of the hospital support the view I hold, that it ought to be the aim of every ophthalmic surgeon to remove



the cataract with its capsule entire, and with as little disturbance of the adjacent structures as possibly. When this is achieved, no matter if the loss of vitreous be little or much, the operation will generally prove a success, provided also the patient is in good health. There is one objection which surgeons holding a contrary opinion could urge, and it is certainly strong ; and if any one can give a recorded opinion on the matter, it will remove all possible and cherished doubt. They may ask if we have seen our patients who were operated upon with loss of vitreous a year or more afterwards, and then if we can say that we do not meet with failure of sight among any of these cases. They may point out that they would accept our conclusions only in such a case. But I can only answer it thus :—I have been for the last 11 years in practice in this special branch, and during this period I have carefully watched cases at the out-door as well as at the in-door, and have records which I spared no pains to make as full and careful as possible, and I think I have not missed many cases ; and I can safely venture to state that during the last 11 years if patients have returned with failure of sight, who were discharged from hospital as cured, their number must be insignificant.

I will conclude these remarks by citing a case in which the operation was attended with profuse loss of vitreous, but which notwithstanding made a very satisfactory recovery.

CASE.

Nursing Ch. Roy, aged 55 years, male, inhabitant of Poorah in 24-Pergunnahs, a Hindu by caste Brahmin, of slender make, apparently not in a satisfactory condition of health. About three years ago he began to feel weakness of sight in the left eye attended with no other symptoms, and this failure of sight began to increase, till for nine months past he has only perception of light, and can see the hand when moved before the eye. On examining the eye all the external structures looked healthy, eyelids normal, palpebral fissure good, cornea of normal shape and size, iris healthy and pupil mobile and responds satisfactorily to the stimulus of light, lens cataractous fully formed of the mixed variety, striæ well marked.

On the 23rd of December last Dr. Cayley operated upon

him under the influence of chloroform by an improved method of his own, section made with Graefe's knife, puncture and counter-puncture at the corneo-sclerotic junction in a line at the level of the upper margin of the pupil, the knife being carried through the cornea a line below its junction with the sclerotic at the upper part, and the section being entirely corneal.

Iridectomy was then performed and the lens evacuated without laceration of its capsule, by means of pressure with Critchette's spoon below the lower segment of the cornea.

In this case chloroform could not be pressed safely, as the patient showed signs of non-aeration of the blood as well as stoppage of breathing, and Dr. Cayley had to do his best to remove the lens, though there was straining of the muscles of the eye; and just at the moment when the lens came out, the patient strained so violently that our impression at the time was, that the whole of the vitreous had escaped. Immediately the eyes were closed, and after careful manipulation with the fingers over the lids, the eye was opened once more, and we found the section gaping, corneal flap floating though not doubled up, and on attempting to re-adjust the section more vitreous came out, and we had to close the eye to avoid more danger.

On the fourth day after operation the eye was opened, as the patient since the day of operation did not complain of any severe pain in and around the eye, and the pad and bandage were not displaced. The section was found to be ununited, there being a linear prolapse of the iris through the section; pupil bright and clear but drawn upwards; no pain in the eye, supraorbital or temporal regions.

Nothing but simple compress and bandage were applied and every day re-adjusted; on the 8th day the section looked well united, but a black linear mark of the prolapse remained; on the 11th of January, that is, after 19 days' stay in hospital, he was discharged with his vision restored to the extent noted below:—

With + 3" biconvex lens he can see to do all his ordinary duties in life and see the hands of the clock at 20'. With $2\frac{1}{2}$ " can read ordinary print.

THE CALCUTTA MEDICAL SOCIETY.

The third meeting of this Society was held at the Medical College on Wednesday, the 10th March 1880, DR. CAYLEY presiding.

DR. K. McLEOD exhibited two cases which, he thought, illustrated very well the advantages of the antiseptic system of surgical treatment. One was the patient from whom the EXOSTOSIS exhibited at last meeting had been removed. He was now able to walk about; the cicatrix was linear, a little difficulty in flexing the knee fully remained, and some thickening over the site of the tumour; but these conditions would no doubt improve in time. His recovery had not, however, been uninterrupted. A day or two after the operation great swelling and tension of the thigh were found to exist, with considerable constitutional disturbance. An obscure sense of fluctuation was perceived, and on puncturing the swelling a considerable quantity of sanguineous serum was drawn off. This relieved the symptoms, local and constitutional; but a few days later decided fluctuation was again discovered and pus detected by puncture. A large abscess cavity was laid freely open with antiseptic precautions. It was found to exist between the periosteum and quadriceps extensor; two drainage tubes were inserted. This abscess communicated with the operation wound, and was no doubt caused by tension from imperfect drainage.

Both wounds healed up rapidly and without further hindrance; the constitutional symptoms entirely disappearing whenever the tension was relieved, the abscess gradually contracting and its cavity becoming obliterated, though the opening was on the summit of the thigh. Under other than antiseptic treatment so favourable a termination of so formidable a complication could hardly be looked for.

The second case was one of CARDEN'S AMPUTATION ABOVE THE KNEE.

The following abstract of it was drawn up by Assistant Surgeon GOPAUL CHUNDER CHATTERJEE:—

Damoo, a native male æt. 35 years, by occupation a barber, was admitted into the First Surgeon's ward, with necrosis of the tarsal and metatarsal bones and atrophy of the right foot and slight contraction of the right knee, on 15th October 1879.

History.—Three years before admission here he had an abscess on the dorsum of his right foot preceded by a few days' febrile disturbance; this burst of itself, and the ulcer thus caused discharged for some time. He had several such abscesses about the dorsum of the right foot, which healed up one after the other.

Previous history.—The patient never suffered from any chancre or bubo, nor any skin disease or sore-throat. He had gonorrhoea a few years back. There is no history of any injury to the affected foot.

Condition.—Is very poorly nourished, with contraction of right knee, and slight atrophy of the right leg and foot. Cannot walk: has peculiar movements of the eyes: is somewhat dull and stupid: has a constant feeling of his head being lifted up. There is extensive ulceration over the dorsum of his right foot and irregular contraction of the toes. There are three or four sinuses which lead to dead tarsal and metatarsal bones; ankle joint moveable. No fever on admission: appetite bad: bowels regular.

Progress.—The ulcers discharged copiously for about a fortnight, then they began to heal. A piece of dead bone came out from the right foot a week after admission. On the 15th of December last the patient had fever, and since that time the foot took a bad turn, the ulcers extended, appetite became very poor, and at the latter part of December the patient became very prostrate, passed stools in bed-clothes, and had very weak pulse; fever used to be very high in the evening (103° F.). A small abscess was detected over the upper end of right tibia which when opened was found to communicate with carious bone (tibia only). The patient rallied a little, pyæmia disappeared, pulse became stronger, and appetite improved a little, but the condition of the foot

and leg was worse ; careful examination was made on the 4th of January last when the right tibia, right tarsal and metatarsal bones were found to be extensively carious ; the right ankle was stiff, so also the knee to a certain extent,—the latter free from suppuration. Amputation of the affected limb above the knee joint was thought advisable to save the life of the patient. Carden's amputation was performed on the 5th of January last ; about half an inch of the divided end of the femur was stripped during operation. The patient had no unfavourable symptoms after operation except increased frequency of his pulse, which on the 3rd day of operation was 156 per minute ; temperature never rose above 101° F. Discharge was scanty and inodorous ; the dressings were changed every day for the first two or three days, then they were changed at an interval of 2, 3 or 4 days ; slight sloughing (size of a four anna piece) was noticed in the anterior flap a week after, which separated two days later. Some of the stitches were removed on the 17th, when the flaps were found united. Temperature 99° F., pulse 102. On the 20th the drainage tubes were removed ; slight discharge continued from the stump until the 31st, when it was found tender, and distinct crackling was detected ; next day a small drainage tube was found making its way through the sinus ; it was removed ; the discharge ceased within a few days, and gradually the stump healed up. There was slight flexion of the amputated thigh over the hip, this was corrected by means of a straight splint. Has gained flesh and strength.

This man was in a state of utter prostration, and was being poisoned by absorption of putrid fluid from his carious tibia and tarsus. The cancellous tissue of the femur was degenerated—soft and filled with oily medulla ; the stripping of the periosteum, notwithstanding great care to prevent it, was evidence of the feeble vitality of the bone.

Notwithstanding his constitutional debility and the accidents of slight sloughing of a corner of the anterior flap, stripping of periosteum, and retention of a piece of drainage tube, the process of repair was most satisfactory. No exfoliation took place ; no inflammation whatever appeared, and the discharge was of a lymphic character throughout. The man is

now plump and lively, and the stump callous, the skin being freely moveable over the end of the bone and the cicatrix (linear) entirely behind it.

BABOO AVINAS CHUNDER BANNERJEE, L. M. S., exhibited—1. A HEART from a fatal case of chronic catarrhal pneumonia whose apex was bifid, the notch occurring between the two ventricles.

2. A HEART showing aneurism of the anterior flap of the mitral valve. Its opening was towards the ventricle, and it contained a small blood clot. The patient was 23 years old : had manifested no symptom of cardiac lesion during life. He died of chronic catarrhal pneumonia. There was no history of syphilis or rheumatism, and no atheroma existed.

3. A HEART with hypertrophy and dilatation of the right ventricle owing to chronic bronchitis and emphysema. There was also a patent foramen ovale admitting a No. 12 catheter : was 35 years old, admitted in a moribund state. The valves were competent. The left side was healthy.

4. A specimen of CHYLOUS URINE passed ten days ago which still retained exactly the same degree of acidity as when it was voided. The sp. gr. was 1016 and albumen = $\frac{3}{4}$.

The patient was 36 years of age. The morning urine was clear ; but it became chylous after food. There were no filariæ in the urine. The blood was not examined ; there was no sediment nor spontaneous coagulation. According to Scherer healthy urine increases in acidity for a week with formation of urates, and then becomes alkaline with deposit of phosphates.

BABOO LALL MADHUB MOOKERJEE asked if any treatment had done this patient good.

BABOO AVINAS CHUNDER BANNERJEE replied that gallic acid in doses of grs. xv. with grs. v. of pulv. gum. acaciæ had been given thrice daily without benefit. A native female, suffering from the disease, had been treated with 3ss of gallic acid thrice daily and got well.

BABOO LALL MADHUB MOOKERJEE had treated a case in the same way which recovered.

BABOO KANNY LOLL DEY, RAI BAHADOOR, remarked that he had given 10 minims of turpentine in such cases every

four hours with marked benefit. He had seen a case in which the disease recurred every hot weather.

BABOO RAKHAL DAS GHOSE had seen the disease in a European female. A number of remedies were tried without avail. At last at her own suggestion *kala jeera* (*Nigellus sativus*, a powerful galactagogue) was given and she got well.

DR. CAYLEY remarked that intermittency was one of the features of the disease. It came and went apparently without special provocation or treatment of any sort. Caution must therefore be exercised in attributing cure to any medicine which happened to be administered when the disease was spontaneously abating. If the chylous condition of the urine were owing to the development of filariæ in the blood, it was intelligible that these organisms had a definite and limited duration of existence, and the throwing off of successive swarms of larvæ by the parent worm might perhaps explain appearance and disappearance—alternations of a chylous and healthy state of the urine.

DR. E. W. CHAMBERS read—

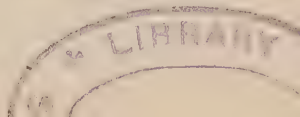
NOTES ON THE EPIDEMIC FEVER AND THE NEW DISEASE (ACUTE ŒDEMA).

Nothing has been of more interest to the profession within the last few months than the study of the "*new disease*" which has made its appearance in an epidemic form. Nothing has caused more suffering and sorrow in many a household than this terrible scourge, which is still spreading in town.

There is not a day when I am not summoned to see one or more cases of the new fever, which unhappily is beginning to be fatal among infants and children within the last few weeks. It is a form of fever which, although I confess I have come across it in my practice in town and in the suburbs ever since the first famine of Orissa and the scarcity in Bengal in 1868-69, or perhaps earlier, never before assumed the form of an epidemic resembling "the plague."

The chief features of the disease are :—

Pains and aches about the limbs; stiffness and pain in the back, and especially in the loins; scanty and high-colored urine, sometimes amounting to dysuria, sometimes preced-



ed by a large flow of limpid urine; intense frontal headache, or slight heaviness of the head with throbbing temporal pain; uneasiness or a feeling of dryness in the throat and nostrils, sometimes a constant sneezing; sensation of burning heat in the body, as though the skin were rubbed over with ground chillies, preceded or followed by repeated sensations of chill; a scarlet efflorescence from the beginning of the disease, especially confined to the face, neck, upper part of the thorax, and the extremities, or petechial spots with circumscribed measly eruptions on face and trunk, or large purpurul or mulberry patches. In infants a marbly mottled, purplish or red tinge of the skin, especially of the extremities, neck and cheeks; a flushed, puffy countenance, with suffused glistening eyes; throbbing of the carotid and temporal arteries visible to the casual observer; restlessness at night, or complete insomnia; jactitation during sleep or sudden fits of tetanic spasms; a feeling of painful coldness in the feet and legs creeping upwards; isolated areas of coldness, specially on the dorsal region of the trunk and dorsum of foot, as from application of a metallic plate, a dry, harsh, leathery feel of the skin, with a peculiar sensation of the skin on the palms of the hands as if it could be peeled away, sometimes actual desquamation; numbness and tingling in the hands and feet, especially along the course of the right ulnar nerve, or of both along the great sciatic; extreme sensitiveness of the nerves (*hyperæsthesia*); intolerance of light and sound, sometimes local *anæsthesia*, but of short duration and circumscribed; obstinate vomiting, or a painful nauseating condition with severe epigastric pains (fixed or spasmodic); precordial uneasiness; violent throbbing and beating of the heart (palpitations), or a labouring irregular intermittent action of the organ; vertigo, sometimes buzzing in the ears, one or both; *constipation* or violent diarrhoea, or dysenteric-diarrhoea of an acute type; abdominal spasms, or distension and tenderness in the umbilical region particularly; stools whitish. (*acholeic*) greenish or dark brown, sometimes blackish and tarry; offensive, frequent, mucous, and attended with gripes; bleeding from the nostrils, throat, the stomach

or the bowels,—an evidence that the force of the septic agent is not confined to any particular structure ; puffiness of the face ; œdema of the face only, of hands and feet, or general anasarca ; tottering of the lower limbs, as though they were unable to sustain the weight of the body ; a sudden unsteady gait as if one were drunk ; dizziness in the head ; loss of memory and confusion of thoughts ; feeling of approaching danger ; a nervous tremor throughout the frame, or general malaise, occasionally obstinate hiccup ; stiffness of the joints, and always a complaint of unrefreshing sleep during the night ; frequent relapses with one or more of the foregoing symptoms.

These are the varied symptoms, more or less associated together in different subjects of different constitutions and at different ages. You will rarely find all the symptoms in a single patient, but there are instances where most of the symptoms are present.

The tongue in almost all cases in the early stage is red or furred in the centre, occasionally notched, but usually with a red tip and edges ; as the disease progresses and the patient is depressed the tongue becomes dry or dryish and furred-brown in the centre—sordes rarely present ; when the disease is ushered in with great severity there is a tendency to stupor and wandering delirium, generally confined to one particular subject. The patient is, however, rarely insensible, but is always roused up from the stupor and delirium by being loudly spoken to ; sometimes furious delirium and violence occur. In the severest forms the eyes are suffused with deep conjunctival congestion and lachrymation ; there is rolling of the eyeballs or strabismus.

Now it is necessary that I should explain how the œdema so constantly present in native subjects, and which is now unhappily being looked upon as *beri-beri*, is no other than one of the symptoms of this febrile complaint, or one of the several varieties of this species of fever, which closely resembles the true famine or relapsing fever, or the pestilential fever described by Copland as the Hæmagastric fever, and in some of its features “the plague.” It is essentially a contagious febrile complaint, the specific poison of which,

through the agency of the blood, acts directly on the cerebro-spinal system, and chiefly on the sympathetic nerves.

There is little difficulty in tracing the fact that in one house or in the same locality for every ten cases of this fever, with all the symptoms except œdema or general anasarca, we meet with only one case which might be mistaken for or be called *beri-beri*. If therefore, by a consensus of medical opinion in Calcutta, *beri-beri* is no other than what has been lately seen and described as the "new disease," my contention would be, then, that the disease hitherto recognized as a distinct one is another form of the relapsing fever with anasarca influenced by malaria (*typhomalarial*); and *barbiers* also another type of the same disease, generated by the same poison, as I have seen more than one such case resembling it closely and have heard of others.

In one house only there were 19 cases presenting the most varied phenomena, although in their leading features they were alike. One case proved fatal, and that unfortunate person was a poor resident native nurse, and the only one who got the œdema to the extent usually seen among natives. To begin with the narrative :—

A young lady aged 16 years, robust, of fair complexion and rather full-blooded, who had just come home for her Christmas vacation from a boarding school in Entally, complained of a severe headache with feverish symptoms, which she stated had been troubling her for two or three days. On the second day of her residence at home her face got flushed, her eyes were suffused, and she complained of intense frontal headache and throbbing of both temples; carotid pulsation; obstinate vomiting of bile and mucus; constipation; pains and aches in the back, loins and limbs; pulse was full and quick, skin hot and dry. On the 3rd day at home, or 6th day from date of first symptoms of feverishness, she gradually sank into a state of stupor; heavy respiration; urine scanty; countenance bloated and hands puffy, with wandering delirium, from which she was easily roused by being loudly spoken to. Her tongue got dry and brownish, but with the characteristic red edges and tip. Her whole

body was one mass of scarlet hue, skin harsh and dry ; under the usual management, which I shall describe separately under the head of treatment, she soon recovered thoroughly, *perhaps in nine days, but relapsed within a week, and after suffering for a few days with headache, fever, palpitation, and redness of the face and hands, she was once more well, and was immediately packed off to school after a thorough change of clothes and a good warm bath—a precaution I had taken to prevent the communication of the disease to the school, while satisfying my anxiety to secure for her the only feasible change.

Now her mother, a lady of about 48, who was not a resident of Calcutta, but was living at Howrah, came over to attend the girl whose case I have just mentioned. Before the daughter had thoroughly recovered, the mother took the infection, and scarcely had the other been convalescent and on her legs when the mother was down on her back with intense “splitting” headache ; vomiting ; scarlet efflorescence on the face, extremities and chest ; pain in the epigastrium ; violent palpitation ; puffiness of face and hands ; nervous tremor through the whole body ; stupor ; occasional wandering delirium ; complete want of sleep. She got well in about 12 days, but in two or three days relapsed into all the former conditions, and after suffering for another two or three days, became convalescent once more. At this time the resident Mahomedan nurse, a poor woman who used to sleep in the room, took ill of the fever and went home on leave. In two days she returned for her pay quite swollen, with general anasarcaous effusion, and on the following day she was dead. This case was at once followed by that of a baby six months old, who suffered from subjective symptoms best known to itself, but among the objective symptoms there was great restlessness and insomnia (sleep being only obtained by Bromide of Potassium draughts), redness all over the body and troublesome vomiting ; the little heart beating as quickly as one could count. This case, however, recovered. There were five other

* Since her return to school, a fortnight or three weeks later, she had a relapse, with pains and aches, headache, obstinate vomiting, scarlet efflorescence, petechial spots (*roseola*) with a crop of vesicular eruption on the *alæ* of the nose and lips on subsidence of fever.

children between the ages of 2 and 3 ; they all suffered, and with one exception all had a second and a third relapse. One of them, a boy of seven, complained of excruciating *epigastric pain*, and was doubled up for some time. There was violent retching, and he also complained of the sensation of pins-and-needles along the left ulnar nerve. All these symptoms returned on a relapse a second and third time.* In all these cases there was distressing vomiting and headache and scarlet efflorescence. Among them one had swelled face and hands and another acute dysenteric diarrhœa, while five had bleeding from the nose and one vomited blood. During the course of these juvenile cases an *elderly* member of the family caught the fever, and her symptoms are deserving of some especial notice, as some of the leading features of the disease closely resembled those described by Tanner under the head of Cerebro-spinal fever. "Headache was incessant and distressing, countenance was at intervals livid and pale, anxious and pinched. There was miserable restlessness with some mental confusion. The tongue, pulse, and temperature were not much affected except during the exacerbations which were always at the close of day. There were convulsive, and uncontrollable muscular contractions in different parts of the body, with the characteristic grin of lock-jaw." These nervous symptoms always commenced from the left lower limb. Besides these symptoms there was vomiting, headache, hiccup, distressing distension of stomach and flatulency, intolerance of light and sound and obstinate constipation, with cold chills and burning sensation of the skin and violent palpitation. Relapses occurred every third or fourth day which went on for nearly three weeks, when convalescence slowly set in.† This is no doubt a conclusive evidence that the poison of the fever expends itself principally on the nervous system. With this case I have disposed of the tenth instance in the same house, but three outsiders,—two natives and the other a Christian nurse—took the infection, complained of pains and aches about

* This boy is still suffering from occasional attacks of one or more of these symptoms. He is covered with an eczematous rash all over, especially in the back, and has lost flesh considerably.

† Is still unable to leave her bed and the feet occasionally swell, with distressing dyspeptic symptoms, fever and palpitations.

the body and limbs with feverishness, and had to discontinue attendance. There was *one* other lady friend who after a week of attendance went away with feverishness, pains and aches, but soon recovered. *Five* other adult members of the family who were at the time in the house, all got more or less affected with the fever, and got relapses. Five bled from the nostrils, but all complained of great prostration, with puffiness and flushing of the face and much nervous agitation, scarcely overcoming the effects for a long time. In all the cases there was a craving appetite during the intervals of the disease, and scarcely much loss of appetite during the continuance of the attacks.

Of the above-mentioned cases one was that of a girl on a visit from the N. W. Provinces ; on convalescence she returned home, but not before *two* relapses had occurred. Her face and hands were swollen.* On the second day of her arrival at home she communicated the fever to 3 or 4 members of her family. Vomiting, pains, and aches about the body, redness of skin and headache with palpitation were the chief symptoms in these instances. A medical gentleman at the station attributed the outbreak of the disease to infection carried in the warm clothing. With this I close the history of an outbreak in a house about the vicinity of Free School Street which communicated itself to a total of about 23 lives, radiating to some distance from the seat of the original case ; and yet there was only one instance of anasarca as in *beri-beri*, and that in a weakly native subject. The conclusion is evident.

I will now go on to another house in one of the best localities of the town—Moirā Street. Three cases of fever occurred,—all among children. In one, 7 or 8 years old, there was redness of skin, headache, pains in the limbs and back, vomiting : recovery in three days and a relapse on the 5th day, and convalescence on 6th day. In the other, 4 or 5 years old, beyond the scarlet efflorescence and slight feverish uneasiness for a day or two, nothing more occurred, but an infant 5 months old, had petechial spots of a reddish purple tinge ; a mottled, marbly appearance of the extremities, disappearing

* She had severe epistaxis since her return home, but is otherwise well.

on pressure; insomnia; severe vomiting and a sallow pallid countenance with high fever, temperature ranging from 102° to 104° . These symptoms abruptly terminated in acute dysenteric diarrhoea of a violent nature: tongue was furred white, with intensely red tip and edges; lips scarlet. The mucous membrane of the visible portion of the bowels, on straining, was purplish red, with a scarlet areola round the fundament, extending to a radius of one inch. Febrile exacerbations always commenced in the afternoon to wards evening, intensified at 1 or 2 A. M., as is usual in all these cases of fever. Abdominal distension was great. On the 3rd or 5th day the bowel symptoms lessened, but the fever which had left returned with much severity, and the little patient got into a state of nervous tremor and manifested tossing of the head from side to side with dulness of the eyes as if in a stupor, and intense heat of head in spite of continued cold applications; pulse 180. These alarming symptoms continued until the little sufferer sank on the 8th day of the disease. Now in this house the poison of the fever was brought by a woman servant who had an attack of the oedematous disease, and in her house, in a notoriously unhealthy bustee in Hill's Lane, she lost her son, her daughter, and her daughter-in-law,—all from acute oedema. The washerman of the house was also affected with the same complaint. There is little doubt, after what I have stated, that there is some connection between the disease characterized by the swelling of the limbs (the so-called *beri-beri*) in the natives, and the relapsing fever in Europeans and Eurasians, or that they are identical.

Within a week of this case another infant 4 months' old, was placed under my treatment. There were petechial spots, a mottled appearance of skin, but in this instance obstinate constipation, convulsions, and a continuous nervous tremor and rigidity of muscles one whole day before death: incessant vomiting, tongue red at tip and edges, abdominal distension from the beginning; strabismus of one eye and paralysis (partial) of one side of face and eyelid. A few hours before death this child's skin became almost bluish black; this happened in the vicinity of European Asylum

Lane, where a short time before one of the local papers announced a death as one from *Black fever*.

In 1878 I attended a Eurasian family in Dhurumtolla Street on the ground floor of an upper-roomed house : all the inmates, numbering seven, together with two visitors, were affected with fever, scarlet efflorescence and œdema of the legs ; while two of the male native servants soon took the infection, got swelled legs, and discontinued attendance. The head male member of the family, to all appearance a European, suffered from the most alarming symptoms : There was general anasarca, ascites, œdema of lungs and possibly pericardial effusion, as there was much orthopnœa and dulness of precordial region. He benefited under treatment ; was sent to Chandbally by steamer. He improved for a while, but returned back as bad as ever so far as regards the anasarca, but in the course of about six months he recovered. In this case there was great mental depression and a constant desire to commit suicide by cutting the throat. There were distressing insomnia and restlessness throughout the ailment. Pálpitation was severe and urine high-colored and scanty. Lithia always augmented the flow but caused depression.

In June 1877 I had several cases in a school at Entally, but beyond the redness of skin (rather measly), puffiness of the face and hands, and petechial spots in some, nothing remarkable occurred in most of them. One isolated case, however, terminated fatally with *acute œdema*. At first I looked upon these cases as measles, but relapses, sometimes to a second and third occurrence, disturbed my mind, and I then made a note of the matter in the hospital register.

Extract from register.—"This year there has been an unprecedented instance of all the children in the Infirmary getting a relapse of measles without any exception, and the second attack has been characterized by being of a severe type. I wonder how so many children have escaped death, considering that they are mostly young and weakly subjects."

There were in all three deaths.

In 1878 there were several cases under my care of fever of a similar nature : with scarlet efflorescence, severe palpitation, vomiting, insomnia, sometimes constipation and

at other times diarrhœa with dark evacuations ; in some cases large purple patches on the skin. Tongue always furred white with red tip and edges ; extreme prostration ; nervous agitation ; delirium, and occasionally, only in the severest cases which generally proved fatal, insensibility : I am now convinced beyond a shadow of doubt that these were neither typhoid, remittent nor scarlet fever cases, they all resembled more or less the fever which is now prevailing in town coincidently with cases of *acute œdema*.

Returning to the narration of cases within the present epidemic, my memory takes me back to one which terminated fatally about August or September of 1879. An old gentleman of means, a Eurasian, was engaged in completing some works at Mateabrooz in the grounds of the ex-King of Oudh. He contracted the "*acute œdema*," as it was prevalent in the place at the time. There was hacking cough, loss of memory, stupid countenance, spongy gums, large purplish-red patches on the skin, which being itself dark, did not show much of the delicate shades of color. There was expectoration of sanguinolent matter, saliva always tinged with dissolved blood, and offensive smell from the mouth. Large blisters broke out on the back of the ears and on other parts of the body, as though putrescence had set in before death. There was no mistake in the malignancy of the case : every precaution was taken to prevent the spread of contagion, and happily the disease did not spread. Other cases of a similar nature occurred in 1877, but there was no swelling of the feet or anasarca. This leads me to the conclusion that the poison of the present epidemic is of a specific nature, malignant, and endemic since 1868, or soon after the famine of 1866, when hosts of the famine-stricken people were walking the streets of Calcutta, and were housed and fed in camps in the vicinity of the town without any proper sanitary precautions. A Roman Catholic Prelate of Calcutta went on a mission to Orissa in 1869. He contracted a fever of *low nervous type*. Both his legs got œdematous, there was puffiness of the countenance and hands ; inability to undergo any mental exertion ; loss of memory ; severe palpitations (but as this was an old weak point in

him much was not made of it at the time) ; sleeplessness ; great prostration ; constant relapses into febrile symptoms and tardy convalescence ; no albumen in the urine. Now this was a true case of relapsing fever contracted in a famine district. A trip to Europe soon restored him to health, but as one attack predisposes to future attacks, a tour undertaken through the same province in 1877 brought a return of the old fever with pulmonary apoplexy, dyspnoea and hæmoptysis. On a second trip to Europe he again thoroughly recovered. I bring forward this case to show that œdema of the legs, general anasarca, and pulmonary complications which show themselves in this epidemic, and are now looked upon as symptoms of *beriberi* and distinct from the fever cases, are features of famine fever as described by Tanner in his 6th Edition.

An interesting, though painful, case occurred about October last. A robust European of active habits, had suffered about a year ago from the relapsing fever, which prostrated him for nearly two months. The liver was enlarged, and the fever was so obstinate that a sea trip alone restored him to health. On his return he took to his usual duties which constantly required his presence in suburban districts within a few miles of Calcutta, usually the hotbed of malaria. He got a return of fever last December, and uneasiness in the hepatic region, but with an incontrollable nausea and vomiting and painful precordial disturbance. His countenance was flushed, stolid and bloated. There was an expression of anxiety in the face, while the skin was harsh and dry : there was diarrhoea which soon stopped, and was followed by constipation. I have known this gentleman professionally for nearly thirteen years, and I have always found him temperate. He was used to his glass of beer or two pegs of brandy, as is customary with hard-worked Europeans, but at the time of which I am speaking he would scarcely take a pint of claret, and yet the most violent cardiac disturbances set in, and there would always be an appearance as if he were the worse for liquor. With the slow fever from which he was suffering, the head symptoms increased, there was loss of memory, faltering of speech, unsteadiness of gait, and his case was unfortunately pronounced to be that of one suffering

from alcoholism. He solemnly protested, that he had taken "scarcely sufficient to make a child drunk." He took a little claret and occasionally a peg of brandy, because there was an indescribable general weakness and palpitation of the heart which made him miserable. He could not sleep, and he had no alternative but the night peg. He was treated for nearly three weeks for what he was supposed by others to be suffering from at the time, but without any benefit, until I was called in a second time. I found his feet and legs swollen, tumefied and reddish. There was a distressing "icy-cold" feeling in both feet, severe headache, and an anxious countenance, much flushed and puffy; irregular action of the heart and palpitation; complete want of sleep. The swelling of the lower extremities rose up to the hip, and both hands now got œdematous, and ascites followed, with dyspnœa. I treated him with large doses of æther and ammonia in place of his usual stimulants (brandy and wine being usually the worst stimulants in some forms of the new disease) and a mixture consisting of digitalis, nux vomica and arsenic in camphor water; gamboge, elaterium and jalap as purgatives. In a fortnight the swelling and ascites rapidly decreased, but there was complete paraplegia. I continued the treatment and applied the magneto-electric current, and in another fortnight he was able to go about. There was no wasting of the muscles of the lower limb and no paralysis of bladder.

This case is a good illustration of the medico-legal importance of distinguishing between the so-called *beri-beri* or œdematous type of famine fever and chronic alcoholism. From the medical opinion originally offered in his case, his character was so affected that he had to retire from a most flourishing business in Calcutta. Had he stood on the merits of his case and gone to law, it might have been satisfactorily proved that he was suffering from a painful disease and not from alcoholism. Another instance of a poor Christian woman was related to me, who was suffering from the fever, and was taken for a drunken person on account of the unsteady walk and drunken appearance. There was one peculiarity in the first case, and that is that he always harped

upon one subject,—his going to office. In the midst of any conversation he would be repeatedly reverting to this one subject in a set number of words. Even when paralysed, and he had been satisfied by trying to stand that his legs were useless, he would immediately revert to the same subject "Can I go to office for 5 minutes." It was as pitiable as it was distressing to listen to this oft-repeated theme.

Similarly a lady was taken ill with this fever in July 1879. There was intense frontal headache, temporal throbbing, vomiting, scarlet efflorescence, pungent heat of skin, epigastric tenderness, precordial uneasiness, palpitation, jactitation, pain in the limbs and back and delirium from which, however, she could be roused easily. She recovered after about 12 days, and again relapsed with acute pain in right hypochondrium as if she had perihepatitis or a fit of gall stone, and pleurodynia (for there was no stethoscopic indication of pulmonary disturbance), but in this instance also there was the one theme "ba-ba-ba-ba," which went on for hours, from which, however, she was easily roused by being loudly spoken to. This is a point which has not been alluded to by either Tanner or Aitken in reference to relapsing fever. This lady communicated the fever to her husband, who went through the same ordeal and had a relapse; and again during the prevalence of the epidemic this year he had another similar attack; this time, however, the fever was brought into the house by his son, who suffered also from a complication which is not quite uncommon in these cases of fever, viz., orchitis, scrotal oedema, and a discharge from the genito-urinary passage. In one instance there were large scrotal abscesses and pyæmia, breaking out in a successive crop of abscesses ending in death: thus resembling the "plague." There were three other cases under my observation similarly affected. In females labial abscesses often occur, as well as menstrual irregularities which form a marked feature of septicæmia. I have had two or three such cases during the present epidemic. In further support of the theory that the famine-fever-poison produces cases of acute oedema and can propagate the true relapsing fever, I shall cite the instance of two other families. One in a

house in Marquis Street, a servant (cook) was afflicted with the disease with swelling, which he communicated to a second servant of the same house, and then to three children (Europeans). Fever came on with headache, vomiting, severe epigastric pain, redness of the body and relapses.

In another house in Elliott's Road, contiguous to a bustee where the disease was very prevalent,—12 having died in a short time—a servant brought the infection, being himself a resident of the bustee and similarly afflicted, but in a very mild form. Two of the inmates suffered from severe symptoms of dysenteric diarrhoea. It is evident that the force of the present epidemic fever expends itself on the mucous membrane of the alimentary canal as well as on those of the respiratory and genito-urinary organs.

In a house at Entally a European lady and her son were suddenly seized with violent symptoms of cholera, but accompanied with intense headache, severe epigastric pains and spasms, pains and aches in the back, loins and limbs, scarlet flushing of face and purplish red appearance of the ears. I at once recognized the case as one of the prevailing fever, and treated it as such without trying to stop the bowels abruptly. They recovered in three days. It is worthy of note that opposite to this house there was a bustee where a death had occurred from the oedematous disease only the day previous to the appearance of the cases I have just mentioned. The stools and vomited matter were however quite different from those in cases of real cholera. The vomited substance was greenish and greenish-brown, with abundance of mucus; the stools were at first light colored, yellowish, but soon changed to dark-green, and eventually became of a tarry colour and consistence—being mixed up with a large quantity of mucus; urine was scanty but not suppressed: on recovery prostration was very great. This lady had an attack of the same fever in its worst form in 1879, and suffered from repeated relapses. Her constitution no doubt became susceptible to the influence of the disease, and not until she had gone for a change was she restored to health, but she always suffered from disturbed action of the

bowels. In 1879 her infant caught the infection while she was convalescent, and able to look after it; until then the little fellow was safe from the contagion, being kept away from the mother. In her case in 1879 her heart was seriously affected—sometimes being exceedingly agitated and at other times intermittent, so much so that often there was an actual stoppage for two or three seconds. Large doses of ammonia, musk, digitalis and ether, with a liberal allowance of champagne, brandy and port wine had to be given. Facial paralysis occurred in one case, and in this instance there was a distinct systolic bruit audible at mid-sternum. There was also a troublesome dry cough and dyspnoea as well as sorethroat; this patient had two relapses of the fever, and in the second attack got paralysed in the face. The disease first showed itself in the house among the juvenile residents. There were in all four cases of the fever with relapses, including the father who had it in the severe inflammatory form.

Several other cases showed remarkable implication of the throat and lungs. The posterior pillars of the fauces were intensely red and swollen, and a distressing dry cough harrassed the patient; there were no stethoscopic signs in the beginning except harsh respiration, but in a short time mucous crepitations were audible, and there was dulness on percussion in some parts, especially in the infra-scapular regions. In one there was much pain as in the pneumonia. In two there were spasmodic efforts at coughing as in hooping cough.

In three cases there was hæmoptysis—all in the same house (a school), without the least trace of pulmonary mischief to account for expectoration of blood. All the subjects were adults, young and hearty.

In two cases there was remarkable discoloration of the skin amounting to blackness, due no doubt to the disturbed functions of the supra-renal capsules (*Morbus Addisonii*).

In a few cases a sort of herpetic eruption broke out on the face and body; they commenced as dry-itch and gradually spread into a form of scaly disease with yellowish glisten-

ing furfuraceous scabs. Intense itching of the skin is not uncommon in this disease.

I am of opinion that the disease has been prevalent in India since the famine of 1866 ; it is now endemic in Calcutta, and this is the second great epidemic which originated in the southern suburbs of the town—the first being in 1872-73 or 73-74.

In 1872-73 I had one case of the œdematous disease, it occurred in a European subject residing opposite to the St. John's burial ground near Sealdah. He was sent to Europe, but succumbed from his constitution having suffered years before from dyspepsia. In 1875 I had an Armenian patient, who suffered similarly without any trace of organic disease ; there were general anasarca and ascites, but he recovered. I have made mention of the first instance in a Roman Catholic prelate in 1869, and again in 1876 an Irish gentleman of a religious order who got painful swelling of the lower extremities with redness exactly as in the present cases, accompanied with relapses of febrile symptoms, intense headache, rigors and precordial distension. He was sent to Europe, and he is now thoroughly well. There are instances of sporadic cases occurring under the endemic influence of the specific poison which under favourable circumstances after the lapse of a few years is beginning to appear in epidemic form. The importance of the disease should be fully recognized, and means should be devised to eradicate the germs of it,—at least from large and crowded towns.

From all the accounts I have had, it appears that a great many cases of fever prevalent in town just now are looked upon as true typhoid cases, especially on account of the hæmorrhage from the bowels. It is important to know that while I have had nearly 200 cases, if not more, of the present epidemic disease (from the mildest catarrhal form to the severest typhus or malignant scarlatina type), there has not been one instance of the true enteric fever of which there ought to be no difficulty in recognizing its distinctive character. There is a difference in the condition of stools, and while bowel complication in typhoid is a gauge of the extent of the intensity of the disease in the present fever, it rather relieves the patient.

In the present epidemic it is not uncommon to hear of sudden deaths. The heart abruptly ceases to act, after a severe fit of spasmodic pain, or death may occur from a sudden effusion in the cerebral cavities not unlike heat apoplexy. I have also seen deaths within 12 or 24 hours from the first invasion of symptoms. There is redness of the skin, headache, and vomiting, delirium, insensibility, convulsions nervous twitching, and death,—all within a few hours ; after death the skin gets yellowish or orange yellow, with large purple patches or a general bluish-black mottled appearance ; nails, lips, and tongue almost black as in cholera.

One child in 1879, in a school, was suddenly seized with headache, vomiting, severe epigastric and precordial pains, commenced talking most loquaciously, and while I was still by the bed-side, got insensible and died in a few hours—without ever rallying. The appearance of the skin was more or less as I have just described. In 1878 there were two or three similar cases under my observation. There is therefore a dangerous malignant poison endemically present in the atmosphere of Calcutta and its suburbs, the nature of which should be fully realized.

As I have already, I fear, exceeded the time allowed by the rules of the Society for the reading of papers, I must close these notes ; but I purpose, with the permission of the Society, to return to the subject on a future occasion.

MOULVIE TAMEEZ KHAN, KHAN BAHADOOR, read the following paper on the same subject :—

Since we had the pleasure of meeting here last, I believe I have been enabled to obtain a little more definite and tangible evidence regarding the nature of the disease prevailing towards the southern portion of the town of Calcutta, and the subject matter of which has engrossed the attention of the members of our Society at their two last meetings in this room.

Before proceeding to the details of two important cases which I shall soon have the honour of submitting before you, permit me, gentlemen, to premise the matter by a brief summary of the history of this malady, at least so far as my personal knowledge of it is concerned.



So far back as the year 1878, for the first time I was requested to see a Mahomedan sea-faring person, and a native of some part of the Coromandel Coast. He was a ship captain—" *Mó-al lum*"—of one of the Arab sailing vessels which ply between this port and Jeddah. This person at the time was residing in Duftry-parah Lane, section Mirzapore. He together with his grown up son, and a 3rd member of his family (who had died before my visit), were attacked with this disease. Both the father and the son had hard œdematous swellings of the lower limbs extending up to the loins. The son besides had hæmoptysis and cough also ; and both had considerable difficulty of breathing and a sensation of suffocation. Both had spongy and discoloured gums. In the young man this was associated with spitting of blood, bubbling râles in profusion were audible at the bases of both the lungs, and the heart sounds were, I believe, normal. So far as I can remember, both said that they had returned hale and hearty from a trip to Jeddah. A short time after their arrival here, both were nearly simultaneously attacked with febrile symptoms, which lasted for a few days, and were in turn followed by œdema of the lower limbs, to which succeeded cough, dyspnœa and the other usual concomitant symptoms. Both had obstinate constipation and marked diminution of urinary secretion. At the time I saw them orthopnœa, palpitation, and inability to lie down were present.

The next case I saw was about the latter end of June or commencement of July 1879.

In this instance the patient was a young Mahomedan female, the wife of an ex-pupil of mine of the old Military or Hindoostani class of this college, and at the time in subordinate charge of the Fort Arsenal Hospital at Hastings or Cooley Bazar. The patient was seized with the disease while residing within the hospital compound. I was informed that no other cases of the kind were observed in that neighbourhood.

In this case, as usual, febrile symptoms of a continuous type* of a few days' duration preceded the appearance of œdema of the lower limbs. At the time of my visit intense

* It must be recollected that the husband of the patient was a medical man himself.

orthopnoea, most distressing palpitations, a constipated state of the bowels, and considerable diminution of the urinary secretions, were prominently present. I could not find any abnormal heart sounds, but there was noticed dulness and absence of respiratory murmur on both the sides of the chest. No albumen or casts were found in the urine examined by me.

Simultaneously with the above case, or perhaps a little later yet, a middle-aged male Mahomedan was admitted into the 1st medical ward of the Campbell Hospital, under my charge. On admission a prior history of febrile disturbance, followed by hard and brawny swellings of both the lower extremities, then difficulty of breathing, a tumultuous action of the heart, a sensation of intense suffering and oppression within the chest, a constipated state of the bowels and scanty excretion of urine, were prominent. Further, at the time of his admission I thought I could feel a cord-like sensation in the course of the femoral vessels of both the sides, but in this I was mistaken, for at the post-mortem examination no change was found in these vessels.

In this case, on post-mortem examination, hardness and condensation of the tegumentary tissue of the lower limbs and serous effusions in both the pleural sacs and pericardium were found.

In a house situated close to the Christian burial ground on the Kurryah road, on the 18th of January this year, I saw three cases together, a man and wife, and their daughter. In these also the usual symptoms were preceded by fever, which was said to be not of a paroxysmal kind. In the male patient, besides the usual symptoms, a swollen, tumid and spongy conditions of the gums, with some foetor of breath were present. Further, both the male and the female patients complained of another symptom, which I have not heard alluded to by gentlemen who have already made observations on this disease. Both of them complained that since their present illness they were suffering considerably from "Bowascor," *i. e.* hæmorrhoids. They were not passing any blood, but they stated that each attempt to evacuate the bowels, was attended with intense and agonising suffering, and that both felt as if red hot iron was being driven in during the

act of defæcation. In all the three cases the duration of the disease varied from 2 to 3 months. In the male case marked blueness and lividity of the swollen limbs, with considerable heat, were the conspicuous symptoms. Owing to excessive hardness of the affected limbs the male patient could not walk, but the female patients did not suffer much from this inconvenience. Here I was further informed that most of the members of the houses in that neighbourhood were suffering from the malady, and that several individuals had died also.

Subsequent to this occurrence, and about the latter end of the month of January, I came to know that many members of several families residents of Goristan Lane and Mullick's Bazar, to the south of Colingah Thana (on the Circular Road), were laid prostrate with the disease. In a house containing from 35 to 40 individuals [مولوی نواب جان] nearly nine or ten were suffering, and in another [مولوی معظم حسین] house, consisting of twenty members, nearly four-fifths were laid up. A similar tale of suffering and misery of many other families was narrated with which, gentlemen, I do not like to occupy your time and attention. In most of these cases fever, in a few diarrhoea, and in one or two instances painful affections of the knee-joints, likened to the rheumatic pain of dengue fever, preceded the oedema of the lower limbs. In this neighbourhood I was informed that the disease had terminated fatally in several instances, and people were so scared that many had left their homes.

About the same time I saw two more cases in the southern terminus of Moulvie Ghoolam Soobhan's Lane (situated between Elliott's Road and South Colingah Street). Here a middle-aged Mahomedan female and her nephew were suffering. In these also fever preceded the other symptoms. They had also constipation, and suffered from intolerable burning pain during defecation, with a frequent desire to go to the stools.

On the 1st of this month, gentlemen, I witnessed the largest number of cases of this disease in one single neighbourhood. This block of land is located in a nook of Elliott's Road, and numbered 24; it is bounded eastwards by Goristan

Lane, southwards by Hill's Lane, and to its north sweeps past Elliott's Road. Here in one house, consisting of nearly 17 or 18 individuals, three males and six females were laid prostrate. With the exception of one, in all the others œdematous swellings and the subsequent train of symptoms, inclusive of orthopnoea, palpitation, &c., were preceded by febrile disturbance. In the exceptional case—a young girl, who was very bad with orthopnoea when I saw her—the limb swellings were stated to have been preceded by intolerable itching of the whole body and the subsequent appearance of a rash all over it, and which, from the very vague description given, I think to have been of an “urticarious kind.” This poor girl died the next day. In one of the male patients, and several of the females also, constipation with the distressing hæmorrhoidal symptoms described before, were present. The male patient has been much benefited, I am glad to add, by the frequent use of a little mild aperient consisting of some Bitartrate of potash and Sublimed sulphur made up into an electuary with confection of Senna and a few drops of peppermint oil, which I had prescribed for him.

This much for a cursory account of this singular disease as seen by me; and now, gentlemen, with your kind permission, I shall proceed to read a short account of the two important fatal cases of this disease. The subjects of these were very lately admitted in the female ward of the Campbell Hospital under the care of my respected colleague Baboo Doyal Chand Shome, M. B., and to whose kindness for allowing me to make use of the notes of the cases, and for permitting me to perform the post-mortem examinations, I, and I may add all of us, are under the deepest obligation, because the revelations of the post-mortem results appear to throw some degree of light upon the nature of this *obscure disease*.

I had no opportunity of seeing any of these cases during their lifetime, and am obliged to Baboo Beepin Behary Gupta, one of the resident Assistant-Surgeons of the Campbell Hospital; for the following notes placed at my disposal.

CASE 1ST.—Mehur Jan, aged 35, a Mahomedan female,

resident of Mullick's Bazar, north, admitted on the 19th February 1880, and died six hours after admission into hospital.

History.—About a month since she suffered from fever followed by œdematous swellings of the lower extremities; could not give the actual date of the commencement of the disease. Has got looseness of the bowels for the last 10 or 12 days, and since the latter complaint, the œdema has gradually extended upwards, and occasioned great difficulty of breathing.

Present condition.—Body well nourished; extremities swollen and œdematous. The affected limbs are hard and tough; breathing difficult and hurried; her answers are short and abrupt, for she cannot hold her breath long. There was distinct bulging on the outer side of the right chest, almost occupying the infra-scapular and axillary regions, where the percussion note is dull, and minute crepitations are audible at the latter end of inspiration: cough troublesome; expectoration scanty. As already stated, this patient died shortly after admission.

On the morning of the 20th of February, a post-mortem examination was performed by me. The whole body was of a livid blue color. Face, eyelids, the trunk and mammary glands, the upper and lower limbs bloated, froth issuing from the nostrils. The superficial veins of the neck full and turgid. The integument about the perineum, the vulva, and the silvery streaks over the abdomen tense, bright and lustrous. The dorsum of the feet, the calves of both the legs and the gluteal region of a deep dark color, peculiarly hard and brawny to feel, and do not in the least pit or yield to pressure. The legs stiff and firmly flexed over the thighs. On making a few long incisions in the œdematous parts deep dark sero-sanguinolent fluid commenced to trickle out gradually and in very large quantity; pressure over the cut surfaces in no ways facilitated the transudation of this fluid—quite the reverse of what obtains in serous œdematous swellings. The substratum of fibro-areolar tissue beneath the skin of the lower limbs and nates was of a dark red color and most peculiarly and markedly condensed and hard, and

imparted an almost gristly feeling to the edge of the scalpel. From the cut surfaces the same kind of thin dark-reddish fluid was seen issuing. On carefully reflecting away a flap of the fascia lata from the femoral region, the muscles underneath, and the loose connective tissue which surrounds and dips between the muscles, presented a marked and peculiarly pale, flabby and sodden appearance, and were bathed and saturated with a clear pale serous transudation. It is worthwhile noting here that, wherever dissected, the peculiarly thin, deep and dark-reddish sanguinolent transudation appeared to be confined to the substratum of the tegumentary areolofibrous tissue, and that the soft parts and the connective tissue underneath the fascia presented the usual pale, sodden appearance of anasarcaous œdema. The saphenous and femoral veins contained much thin dark-colored blood, but no thrombus or clots were found; and nowhere did the internal lining membrane of the veins present any unusual amount of redness or brightness of color. The superficial veins of the neck, the jugulars, and at a subsequent stage of the examination, the venæ cavæ also, were found to contain large quantities of thin, dark-colored sanguineous fluid. No clots were met with anywhere. The sheath of the femoral vessels was not matted together, and nowhere were any traces of lymph exudation noticed. The inguinal lymphatic glands presented no unusual redness of color, nor did they appear to be at all enlarged.

Head.—The scalp was very œdematous, and on cutting through it the same sero-sanguinolent fluid came out. The sinuses of the dura-mater were full, and on being cut through a very large quantity of the same thin, red fluid gushed out. With the exception of some amount of extra-vascularity of the pia mater covering the right cerebral hemisphere, no altered appearance was noticed in the meninges of the brain. The outer surface of the anterior and middle lobes of the cerebrum looked rather congested, markedly more so on the right than on the left side. On section punctæ vasculosæ appeared to be rather too numerous. The brain substance appeared to be of natural color and consistence. The lateral ventricles contained a small quantity of clear serous exudation. The

choroid plexus and velum interpositum appeared to be rather full and gorged.

Thorax.—Nearly three-fourths of each of the pleural sacs were filled up with limpid, pale, serous exudation. Nowhere were signs of hyperæmia, or traces of lymph exudation noticed over either the visceral or the parietal surface of the pleura.

Lungs.—The upper lobe of the right lung appeared healthy and was crepitant on pressure ; but the middle and lower lobes were in a non-resilient and carnified condition ; furthermore, the lung tissue was soft and friable, breaking down on pressure ; a section presented a grey slaty hue ; no traces of hyperæmia in the cut surfaces, and a small quantity of serous fluid escaped on pressure. The *left lung* appeared œdematous and pitted on pressure : was scarcely crepitant ; a serous fluid almost void of air bubbles escaped from the cut surface.

Heart.—Natural in size, rather pale in color, and soft and flabby. Pericardium of a natural color, nowhere presented any signs of vascularity, or lymph exudation. Pericardial sac contained about ten to twelve ounces of pale straw-colored serum ; no flakes of lymph exudation seen floating. In both the ventricles very small and soft coagulæ were found. The endocardium and the several valves were apparently healthy. In the pulmonary artery a small quantity of thin dark-colored blood, and in the aorta a very small and soft clot was found. The loose connective tissue surrounding the roots of the great vessels at the base of the heart looked œdematous and infiltrated with serous exudation.

Abdomen.—The abdominal parieties thickened to almost the extent of about $2\frac{1}{2}$ to 3 inches, and infiltrated with the same deep reddish-colored transudation. The omentum, mesentery and other duplications of the peritoneum were of a dark reddish or deep brown color. No serous transudation into the cavity of the peritoneum. The mesenteric glands were prominent, enlarged and of a deep livid color. The pyloric end of the stomach rather vascular and congested, and the coats of the organ felt thickened. Both the small and the large intestines presented a deep, dark, congested

appearance, and appeared as if contracted in their diameter. The hæmorrhoidal veins were full and varicose.

Liver.—Normal in size, of a pale fawn color, its surface pretty smooth, but rather hard to the feel. Its surface well mapped out by inter-lobular venous congestion. Gall bladder full; the biliary and common ducts distended with bile.

Spleen.—Not enlarged in volume; consistence rather soft and friable.

Kidneys.—Apparently highly vascular, the capsule peeling off easily. Bladder empty.

Female generative organs apparently healthy.

CASE 2ND.—Sowrathee, a Mussalman female aged about 20 years, and an inhabitant of Aulum Bazar (most probably Mullick's Bazar is meant), was admitted into the female ward of the Campbell Hospital on the 20th of February, and expired on the 21st—about eight and twenty hours after her admission.

History.—Patient had an attack of diarrhœa about a month ago, which lasted for about four days only. Subsequently she noticed a swelling of the lower extremities with increased body-heat (fever). The œdematous swellings were soon followed by inability of locomotion, owing to excessive tension and stiffness of the lower extremities. With the extension of the swelling upwards towards the trunk difficulty of breathing supervened; and at the time of admission into hospital the dyspnœa was most urgent and distressing.

Present condition.—Body fairly nourished; countenance pale, anæmic and considerably puffed; œdematous swellings of the feet, legs, thighs, abdomen, and hands are present; but the swellings over the dorsum of the feet, the calves of the legs, and the nates are peculiarly hard and brawny, and of a dark livid blue color. Breathing short and hurried, amounting to gasping, any attempt to move or exert increases breathlessness. Patient cannot lie down in a recumbent position, but is always sitting up in her bed. Pulse very small, but quick, and 120 per minute, respirations about 60 per minute. Heart's action much excited and tumultuous; no abnormal bruit audible. Bowels regular; urine scanty.

Patient is afraid to eat anything, as the act of swallowing is attended with increase of dyspnœa.

After showing some deceptive and transitory signs of improvement, patient expired on the following morning.

Post-mortem examination.

The whole body bloated and œdematous ; face livid and swollen, sanious froth issuing from the mouth and nostrils. The lower limbs œdematous, hard and brawny ; no stiffness of the limbs, the legs can be flexed and extended easily.

On making incisions in both the upper and lower limbs, the same dark-red, thin sero-sanguinolent fluid trickled away as noticed in the last case. The subcuticular connective tissue presented the same hardness and dark redness of color. The soft parts underneath the fascia, and the loose tissue about the muscles, were of a similar pale, flabby, and sodden appearance as mentioned in the first case. About the inner and upper part of the thigh the fibro-areolar tissue over the broad fascia was peculiarly hardened, so much so that for the passage of the internal saphenous vein a kind of culvert-like channel was made by the condensation. No clots or thrombi found in any of the veins of the thigh ; and on dividing no blood was seen to gush out from these vessels, as was seen to be the case in the first instance.

Head.—Pericranial tissue hard and œdematous, on being cut much sero-sanguinolent fluid trickled out. In numerous places innumerable punctiform ecchymosed spots were noticed over the reflected scalp, as also over the bony surface of the cranium. On removing the calvarium and cutting through the dura-mater a very large quantity of thin, deep, dark-colored blood gushed out from the sinuses. With the exception of some slight vascularity of the dura-mater, the other membranes of the brain looked healthy. The superficial veins over the cerebral hemispheres were full of dark blood. Nowhere were any traces of lymph exudation noticed.

Sections of the cerebral substance pretty firm, no great predominance of the vascular points noticed. No fluid exudation found within the ventricles of the brain ; no appreciable change in the choroid and velum seen.

Thorax.—In the pericardial, as well as in both the pleural sacs, a very large quantity of pale colorless serum had accumulated. Nowhere were any signs of vascularity or any other traces of inflammatory products found; no roughness of surface; no adhesive bands present any where.

Lungs.—The upper portions of both the lungs were œdematous and hard, and not very crepitant; on being cut in different places, reddish frothy fluid oozed out. The bases of both the lungs were of a livid blue color and carnified, nowhere adherent to the adjacent parts.

Heart.—Normal in size. No white patches seen on surface. The muscular structure looked pale and flabby. On its outer surface in numerous places very small red ecchymosed punctæ were seen diffused. Both the ventricles contained small, soft coagulæ. One of the segments of the mitral valve looked as if somewhat thickened and asperous. The ventricular septum, just about its upper portion, presented a livid ecchymosed patch; this peculiarity was visible on both the right and left aspects of the ventricular partition. On being cut through the ecchymosed condition appeared to burrow within the interstices of the muscular fibres of the septum. Both the pulmonary artery and the aorta contained a small quantity of deep-colored, thin blood; no clots were found in them.

Abdomen.—The folds of peritoneum were of a dusky red color; the sub-serous areolar tissue of the abdominal wall, about the hypogastric region, presented numerous punctated patches of ecchymosis. No serous effusion in the peritoneum.

The Liver was pushed down considerably below, and occupied the whole of the right iliac region. Its outer surface smooth and presented a beautiful variegated appearance, looking as if the organ was artificially injected with a solution of carmine. The lobules were of a pale fawn color, and the surrounding capillaries of the inter-lobular veins were of the color noticed before. Towards its dependent parts the liver presented a bluish congested color. Gall bladder and the bile ducts were full.

Spleen—Normal, no increment of its size.

Mesenteric glands reddish and prominent.

Both the small and large intestines were of a dingy, dusky red color, and the small intestines appeared contracted in diameter. The hæmorrhoidal veins were full and varicose.

Kidneys.—Both the kidneys much congested and of a deep dark color. Capsule easily separated and much mottled on surface. Section of both the cortical and medullary portions looked highly vascular. Urinary bladder empty.

Generative organs apparently healthy.

The tonsils, uvula, soft palate, the buccal mucous membrane and the gums, were of normal color. No enlargement of any of the glandular structures noticed. No lividity, or abrasion, or ulceration seen.

Condition of blood.

I have already noticed that in both the cases, the post-mortem appearances of which have just been detailed, the condition of blood, at least as found after death, was remarkably pale, thin, watery, and showed a strong tendency to non-coagulability.

On the 21st of February, a small quantity of blood taken out from the inferior cava of the case No. 1, was at my request sent for examination to my friend Baboo Tara Prosonno Roy, the Chemical Examiner of this institution. He very kindly examined it, and wrote to the effect that "I thought I saw an unusually large number of white corpuscles." On the following morning (22nd), I with the kind assistance of my friend Dr. Bose, and in presence of my friend Baboo D. C. Shome, examined another portion of the same blood, and we found that the red corpuscles presented their normal form, no crenation or skinking of their borders noticed; we also found that the "white corpuscles" were unusually large in number, in fact so much so that I exclaimed that the specimen was almost leucocythemic. Further I supposed I noticed a hæmatozoon also, and to which I called the attention of Dr. Bose; but we were doubtful on the point, and gave up the idea.

Second specimen of blood.

From the right auricle of the heart of the second fatal case I carefully took out some blood, and brought it over to my respected friend Dr. McConnell, (the able Professor of

Pathology to this institution, and whose absence from amongst us I deplore exceedingly) for examination.

On this occasion also the very large preponderance of the white corpuscles was conspicuous. No change was noticed in its red elements.

This specimen was shown on that very evening to the learned President of our Society, Dr. D. B. Smith, who fully concurred with our views as far as the preponderance of the white corpuscles was concerned. He further remarked that these corpuscles looked very granular; and most probably a precisely similar appearance of the white corpuscles in the 1st case also must have led my friend Baboo T. P. Roy to remark in his letter "that they had a peculiar dotted appearance."

Again, a third time, a drop of blood taken from one of the fingers of a living female patient was examined by ourselves in the Campbell Hospital. Here again the same leukæmic condition of the blood was confirmed; and for the second time a filaria was noticed by us in the field of microscope.

Microscopic examination of some of the affected tissue.

Portions of the condensed tegumentary tissue, the heart, portions of lungs, kidneys, and the liver were examined; and we are again under the greatest obligation to Dr. McConnell for examining these, and supplying me with the following notes:—

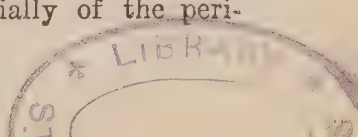
Skin.—No change observed in epidermis or the papillary layers of the skin. Widening out of the meshes of areolar tissue in the sub-papillary layer distinctly marked. Deep red, or brownish red staining of fat lobules, which might be due either to blood staining or to actual extravasation. Blood corpuscles in groups are distinctly visible here and there in the inter-lobular and inter-cellular tissues of the fat masses.

Heart.—Advanced fatty metamorphosis of its muscular fibres—transverse striæ are barely visible.

Lungs.—No marked microscopic change noticed in the lung tissue.

Kidneys.—Cloudy swelling of epithelium; no other marked change.

Liver.—Marked fatty infiltration, especially of the peri-



lobular description. This fatty condition of the liver was also found out by ourselves on a prior occasion in the Campbell Hospital.

Gentlemen, I fear I have already trespassed on your kindness too much, but I have not said all that I had to say and thought on this important subject. For the present I must stop, and hope that you will permit me on a future occasion to say something more.

In reply to Dr. BOWSER, Dr. CHAMBERS remarked that he used nux vomica, iron, digitalis and arsenic with a generous dietary and rest in the treatment of his cases.

DR. CAYLEY observed that he had listened with great interest to the able papers which had been read. The subject was one which needed investigation and discussion, and he was glad that the Society had taken it up so actively. The view put forward by Dr. CHAMBERS regarding the identity of this acute œdema with famine fever was novel, and would hardly, he thought, be accepted until it had been thoroughly sifted and verified.

BABOO LALL MADHUB MOOKERJEE was not prepared to accept Dr. CHAMBERS' opinion that the disease now prevalent was identical with the fever of 1866. He had held charge of famine hospitals in that year, and had not the slightest recollection of having then seen any cases similar to those which were occurring now.

DR. BOWSER had seen many cases of the new disease, but had not observed any efflorescence or other markings on the skin. He had not even seen any scorbutic symptoms.

BABOO RAMMAY ROY had served in the district of Coimbatore in Madras during the recent famine, and had there treated some 500 cases of veritable *Beri-Beri*. Since his return he had seen some 150 cases of the "new disease" now prevailing in and around Calcutta. He was in a position to assert that they were identically the same malady. Nervous symptoms and even headache were, according to his experience, rare both in Madras and here.

BABOO DEBENDRA NATH DEY had seen three cases in which he had remarked a decided periodicity in the occurrence of the swelling. In one case a rash had appeared on the lower

extremities and abdomen. He was inclined to attribute the swelling to disorder of the lymphatics.

DR. MCLEOD remarked that Baboo RAMMAY ROY had supplied the one thing that they all felt had been wanting, namely, the testimony of one who had seen and studied Beri-Beri personally in its usual habitat, and was then in a position to compare from personal observation and experience the disease as it existed in Calcutta with the Madras disease. He might mention that the Baboo had placed in his hands a long and able paper on the subject, which would be published in the *Indian Medical Gazette*. His testimony went far to confirm the impression that had been gaining strength of late, namely, that the Calcutta disease was no other than the Madras Beri-Beri. Dr. Chambers had brought forward another theory that both were but phases or manifestations of relapsing or famine fever. He could not follow Dr. Chambers into details, but his paper was worthy of attention and study, and would be placed in the hands of members before the next meeting, so that they might have an opportunity of weighing his evidence and the conclusions which he had drawn from it. It appeared to him, however, that a great number of different forms of disease had been mixed up in Dr. Chambers' paper, and that his deductions rested on strained analogy and loose induction. As a matter of fact, relapsing fever had not prevailed in Madras either during or after the famine. Dr. D. D. Cunningham, a most keen and accurate observer, had been specially deputed by Government to look for it and had been unable to find it. They had Baboo Rammay Roy's evidence that Beri-Beri had prevailed largely in some parts of the famine-stricken area, and it was curious if the two diseases were homologous that one should have been so completely absent while the other prevailed so severely. The pathognosis of Beri-Beri appeared to him very definite, and that of relapsing fever not less so; but there was very little resemblance between them.

DR. CHAMBERS in reply to the remarks made on his paper laid stress on the nervous symptoms as supplying the link, which connected the two forms of disease. At this stage the discussion was adjourned to a future meeting.

The following gentlemen have become members of the Society :—

SURGEON-MAJOR J. M. COATES, M. D.

SURGEON A. CROMBIE, M. D.

BABOO GOPAL CHUNDER LAHIRI, L. M. S.

ASSISTANT-SURGEON NEEM CHAND GOOPTA, G. M. C. B.

ASSISTANT-SURGEON ANODA CHARN KASTAGIR, L. M. S.

THE CALCUTTA MEDICAL SOCIETY.

The fourth meeting of this Society was held at the Medical College on Wednesday, the 4th April 1880, DR. CAYLEY presiding.

DR. K. McLEOD exhibited a preparation of a knee-joint showing CIRCUMSCRIBED NECROSIS OF CANCELLOUS BONE. The patient, from whom the preparation had been obtained, was an elderly Hindu with a syphilitic history, who came to hospital with an acutely bent knee-joint. An abscess was detected on the outside of it which was opened. The operation was followed by sloughing cellulitis which spread up and down the limb, extending upwards beneath the quadriceps extensor and downwards between the gastrocnemius and soleus. The back of the head of the fibula was found to be bare, and subsequently the front of the shaft of the femur. Free counter-openings were made. The constitutional symptoms were very severe, consisting of high fever of a hectic type. Fluid was detected in the knee-joint, which was found on exploration by means of a capillary trocar to be purulent. Amputation was resorted to to save life which was rapidly ebbing under the continual pyrexia and exhausting discharge. This measure promptly produced a change for the better, and the patient is now almost well. The knee-joint was found full of pus; its cartilages extensively eroded, and cavities existed in the tuberosities of the tibia, and condyles of the femur containing nodules of dead cancellous bone. These cavities communicated with the joint cavity, and were lined by a kind of pyogenic membrane. This condition was one of necrosis rather than of caries; inasmuch as a complete separation of the dead from the living bone had taken place, the former constituting in fact a cancellous sequestrum.

DR. RAYE remarked that the specimen appeared to him to be a remarkably good one of the kind. He had seen a similar condition in the interior of an abscess in the head of the tibia.

BABOO AVINAS CHUNDER BANNERJEE exhibited a patient with enormous enlargement of the spleen. He was a young man, a European, *æt.* 19. Had suffered from fever off and on for two years. The heart was displaced upwards, the apex beating behind the left nipple. The arch of the aorta was perceptible in the inter-clavicular notch. There was a systolic bruit over the pulmonary cartilage. The spleen descended into the right iliac fossa and occupied almost the entire area of the front wall of the abdomen. He had been 20 days in hospital. His health had improved, and there was a slight reduction of the size of the spleen. He had been treated with iron and aloes. There was no anæmia, anasarca or palpitation of the heart. The liver was slightly enlarged.

DR. BOWSER had seen a great many enlarged spleens in the malarious districts—Rungpore, Dinagepore, &c., in which he had served as civil medical officer. He had remarked that burning of the palms and soles was a common symptom in such cases.

DR. RAYE thought that this symptom was present in most cases of malarious fever. It yielded readily to quinine.

BABOO AVINAS CHUNDER BANNERJEE also exhibited the following preparations :—

1. A portion of jejunum showing an abrupt stricture of the gut. The constricted part has the appearance of a healed ulcer. The valvulæ conniventes are absent over the cicatrized area. The chronicity is evidenced by the marked hypertrophy and dilatation of the muscular coat above the site of stricture. No other constriction or ulceration was found in any part. From a native male, aged 36, who died within 24 hours of admission from acute pericarditis and pneumonia.

2. A portion of the lower end of the jejunum showing two transversely placed broad ulcers with much constriction of the gut, and a perforation admitting a crow-quill through the base of the upper one through which the contents were extravasated into the peritoneal cavity producing fatal peritonitis: the rest of the gut as also the stomach was free from ulceration of any kind. The preparation was taken from a native male, aged about 40 years, who had been suffering from dyspepsia, vomiting after meals and colicky

pains in the abdomen for six months, and died of peritonitis soon after admission.

3. A Heart, from the same case, showing patches of sub-endocardial ecchymosis at the upper part of the septum ventriculorum (left side).

4. A Heart showing—

(a.) Acute valvular endocarditis, one of the aortic semilunar valves being perforated in two places.

(b.) Ulcerative myocarditis.

From a native male, aged 26, who was admitted into the hospital for remittent fever, and showed symptoms of shortness of breath and tumultuous action of the heart 24 hours previous to death.

BABOO AVINAS CHUNDER BANNERJEE then read the following notes of TWO CASES OF HEPATIC ABSCESS WHICH HAD BEEN SUCCESSFULLY TREATED IN DR. CHUNDRA'S WARDS BY FREE DRAINAGE WITH ANTISEPTIC PRECAUTIONS :—

No. 1.—Hepatic abscess: history of intemperance: pointing between the ribs: aspiration: free drainage: recovery.

Goburdhon, a Hindu male, æt. 35, of Barrackpore, admitted to the 2nd Physician's ward on the 13th September 1879, and discharged cured on the 23rd November same year.

Previous history.—The patient stated that from a month and half previous to his admission, he had been noticing a swelling on the right side of his chest which was gradually increasing in bulk. About 12 days after the commencement the swollen part became painful, and he began to get fever daily during the afternoon. Some native remedials were had recourse to without any good effect. No history of jaundice, or ascites, or rigors. No history of dysentery or malarious fever. But he was addicted to drinking for about 5 months before his admission.

Condition on admission.—He was pretty well nourished. Used to get fever every night. The right dorsal and lower axillary regions were swollen and prominent: the area being about 6 inches long and as many inches broad. The transverse girth of the right chest at the most prominent part was 16 inches; that of the left side at the same level being 14.

The skin over the part was slightly œdematous and tender to the touch. The intercostal spaces were widened and the costal prominences effaced. The swelling extended from the 7th rib downwards. No pain on pressure below the right costal arch. No thoracic or splenic complications. Bowels constipated : pulse regular : temperature 100·6° F.

Treatment and subsequent progress.—Poultices were applied and a cathartic enema given on admission. On the 15th September (2 days after admission) the swelling was aspirated between the 8th and the 9th ribs on a line with the angle of the right scapula and about 30 ounces of reddish brown pus with some sloughs removed to the relief of the patient.

On the 17th September both the fever and pain increased, and, consequently, an exit for the pus was made by means of a large trocar and canula, and afterwards a drainage tube of about 5 inches in length was introduced into the cavity. This time another 30 ounces of pus came out. The ribs were found necrosed. The whole was, however, dressed antiseptically, the cavity being syringed while the patient lay on his back.

During the next two days the discharge of pus was not free in consequence of the drainage tube that was left in the cavity having been compressed by the intercostal muscles, so a large metallic canula was substituted, and the cavity then began to contract with great diminution of fever and discharge.

Again, after some days, the drainage tube was employed ; and this time it met with no compression in consequence of inflammatory lymph being thrown out all round the opening, making it patent.

From the 29th of September the cavity became a great deal reduced and filled up, as could be made out by the quantity of lotion that could be thrown in. Next only a sinus remained which took such a long time as 50 days to heal up.

Remarks.—The following points ought to be noted in this case :—

1. Intemperance as the apparent cause of the abscess.
2. The tendency to point between the ribs caused their necrosis.

3. The tendency of the intercostal muscles to compress the soft India rubber tube. In such case the spiral wire tubes are best suited.

4. Aspiration was inadmissible in this case.

5. The great length of time taken by the sinus to heal up.

6. Supine position, a favourable circumstance in this case.

No. 2.—Hepatic abscess : history of malarious fever : pointing below the ribs : aspiration : free drainage : recovery.

Umes Chandra, a Hindu male, æt. 22, of Tamluk, admitted into the 2nd Physician's ward on the 18th November 1879, and discharged cured on the 3rd February 1880.

Previous history.—The patient stated that he suffered from occasional attacks of fever for 9 months previous to his admission. Since the last 6 months he noticed enlargement of the liver, and was treated with some native medicines without any good effect. For about 20 days previous to his admission he observed a swelling in the right hypochondriac region, gradually increasing and accompanied with daily fevers attended with chilliness but no distinct rigors. No history of intemperance, or dysentery, or jaundice, or ascites.

Condition on admission.—He was tolerably well nourished. There was a large, painful, fluctuating swelling of about the size of an orange in the right hypochondriac region below the costal arch. The skin covering it was tense and thin, and exhibited a purplish discoloration. The lower intercostal spaces were slightly widened and the costal prominences slightly effaced. The costal arch was a little everted. Bowels constipated: no thoracic or splenic symptoms: pulse moderately full, soft and regular: temperature 78·6°. Tongue moist and clean. Used to sleep easily on his left side.

Treatment and subsequent progress.—On admission bowels were moved by an enema. Poultices and Belladonna ointment were applied over the swelling, and bark and ammonia mixture given freely.

On the 19th November (the day following his admission) the swelling was aspirated at a point one and a half inches below the costal arch and 14 ounces of reddish brown pus

mixed with *sloughs* drawn out. The puncture was closed with collodion.

On the 21st November the pain and the swelling increased when the abscess was tapped with a trocar and canula at the original seat of puncture, and a drainage tube of about 3 inches in length introduced into the cavity under antiseptic precautions.

On the 23rd the discharge not being free, and the tube seeming to be blocked up by means of sloughs, a thicker drainage tube with larger calibre was introduced. The discharge then began to get less and less every day and the evening exacerbations of temperature were stopped by *Cinchona febrifuge*. On the 9th December the discharge having nearly stopped, the drainage tube was taken out.

On the 11th there being again a slight discharge, the cavity was probed, and the depth having been found to be about an inch and a half, a strip of lint was put in. On the following day, however, the lint having been taken out, a narrow drainage tube was made to take its place. This tube was taken out on the 5th of January, but it was again introduced on the 11th, when the cavity was syringed with a lotion of Sulphate of zinc.

On the 27th of January the drainage tube was permanently taken out. The sinus gradually filled up. The cicatrix touched the costal margin though the puncture was made at a point about an inch and a half lower. This fact showed that the enlarged liver became reduced in size. The patient was discharged cured on the 3rd of February 1880.

Remarks.

1. The abscess in this case was unconnected with either dysentery or intemperance, but the apparent cause was malaria.
2. The difficulty of distinguishing in such cases the rigors of suppuration from the rigors of ague.
3. The tendency of the abscess to point below the costal arch, favoured by the previous enlargement of the liver.
4. This case, too, was one where aspiration was inadmissible, as the sloughs would not come out through the needle of the aspirator.

5. Though the cavity contracted within a fortnight after operation, still the sinus took as long a time as 55 days to heal up.

6. The recedence of the cicatrix from below to a point just touching the costal arch. The cicatrix had a tendency to pass under the costal arch, but it had no tendency to cross over.

These two facts, the recedence of the cicatrix and the great length of time taken by the sinus to heal up, show that in these cases we are dealing with something besides the parieties. In the case of the splenic abscess treated in the same wards also the sinus took a long time to heal,—5th March to 16th June—101 days. As for the time taken by the sinus to heal, may not the action of the abdominal muscles and diaphragm in each act of respiration, and the physiological hyperæmia and functional activity of the liver itself after each meal, be the causes, inasmuch as they disturb the rest of the organ which is so essentially necessary for its reparation?

7. The body bandage, in addition to its protecting the dressings, facilitates the recovery by restraining to some extent the action of the muscles, as in rib-fracture cases.

8. In both these cases the fluid when aspirated was not very hot to the feel, showing decomposition of the pus inside, which is a very bad sign, as was pointed out by Dr. Smith in his clinical lectures.

9. These two cases show how large abscesses can be treated without making free incisions—especially in places in the neighbourhood of the pleura and peritoneum—simply by means of the drainage tube.

10. Posture in these two cases—in the 2nd case prone posture was ordered, seeing that the sinus was not healing.

11. We ought to be careful in not taking out the drainage tube too soon.

DR. CAYLEY was inclined to associate liver abscess with the use of alcohol in some form and to some extent. He had never seen a case of the disease in which the patient had not been in the habit of consuming alcohol. He considered free incision with drainage the best treatment and, when the in-

cision could be made below the ribs, recovery was more rapid.

BABOO SOORJEE KUMAR SURBADICARY had seen cases of liver abscess in which the patient had not been addicted to alcohol in any shape.

DR. K. G. SIRCAR said that there was a popular belief that the use of the spirit called *doasta* did not lead to liver abscess.

DR. BOWSER was inclined to associate hepatic abscess with excessive tobacco smoking.

BABOO LALL MADHUB MOOKERJEE had seen an abscess of the liver in a boy of 7. The child had suffered from fever.

DR. CHAMBERS had opened a liver abscess in a boy of 12. The abscess was tapped and the patient eventually sank.

DR. HARVEY'S experience coincided with Dr. Cayley's. He had seen an abscess of the liver which took two years to heal.

DR. RAYE had met with a case of liver abscess in a European female who had never tasted liquor in her life.

DR. MCLEOD remarked that the persistence of sinuses in the cases related was probably due to the circumstance of the abscesses being seated in solid organs which would not collapse so rapidly as one situated in fascia, subcutaneous or intermuscular, where agencies from without aided the intrinsic tendency to contract. In his experience 12 to 15 days was about the time required for an abscess antiseptically treated to heal up. It was very important, however, to withdraw the drainage tube as soon as ever this could be done without incurring a risk of accumulation and tension, because after this period the tube acted as a foreign body and tended to maintain a sinus. Ordinarily the tube could be shortened in 2 or 3 days, and withdrawn altogether in 5 or 6 days. It was often a nice point in treating abscesses and wounds to determine when the drainage tube could be safely withdrawn. Of course rest and support of the part by bandaging must be employed as well. He had treated liver abscesses successfully both by tapping and incision, and it appeared to him that the result depended more on the amount of liver tissue which had been destroyed than on any other circumstance. He believed that in this

as in every other abscess antiseptic treatment gave the best chance of recovery.

BABOO JADUB CHUNDER SIRCAR had treated four liver abscesses successfully by free incision. In one case the incision was made in an intercostal space, and in 3 below the ribs. Two healed in 24 days and 2 in about a month.

On account of the lateness of the hour the discussion on Dr. Chambers' and Moulvie Tameez Khan's papers was again adjourned.

The following gentleman has joined the Society :—

DR. K. P. GUPTA.

THE CALCUTTA MEDICAL SOCIETY.

The fifth meeting of this Society was held at the Medical College on Wednesday, 12th May, DR. CAYLEY presiding.

DR. MCLEOD exhibited part of a CATGUT DRAIN which had been used in a case of stretching of the great sciatic nerve. The specimen consisted of that part of the drain which lay outside of the wound, and was found loose on the dressings on the fifth day. The threads which composed the drain, six in number, had as it were melted away so as to leave a conical stump, one of them being longer than the rest and fining away to an extremely thin point. This, which was originally suggested by Mr. Chiene of Edinburgh, appeared to him to be the perfection of a drain—an article that retained its coherence and use as long as drainage was necessary, and then melted away without causing irritation or disturbance. The wound in this case was about 4 inches long and 2 inches deep. The operation had been performed antiseptically, and primary union had occurred. Several wounds had been treated similarly with equally good success.

DR. MCLEOD also showed a case of STRANGULATED OMENTAL CONGENITAL HERNIA, where the sac had been laid open, a large piece of omentum tied and removed, the edges of the sac brought together, and a radical cure of the hernia thus obtained. The particulars of the case, as reported by Assistant-Surgeon GOPAL CHUNDER CHATTERJEE, M.B., are as follows :—

A Madrassee Christian, aged 27, was admitted with symptoms of strangulated hernia on 10th March 1880.

History.—The patient, who was subject to rupture, noticed a sudden swelling on the right side of his groin 4 days before admission. The swelling was extremely painful and tender. His bowels had not acted during these 4 days, and vomiting had set in on the day before his coming to hospital.

Condition.—There was distinct fulness in the right inguinal canal which could be partially abolished by pressure; the swelling returning on removal of the pressure. There was apparently no hernial descent into the scrotum, nor

impulse in the canal when the patient coughed. The swelling contained fluid, and was dull on percussion. The right testicle was found in an atrophied condition opposite to the external ring, and the tumour reached to a lower level than it. The patient complained of severe pain and tenderness in the right groin and abdomen, and vomited now and then. He made water freely. He was not prostrate. The swelling was considered to be a hydrocele ascending along the cord into the inguinal canal.

Progress.—Purgatives and enemata were administered and ice applied continually for about 36 hours over the scrotum and right groin. These steps did not relieve the symptoms of obstruction, which became more urgent; vomiting became constant and troublesome, and hiccup appeared on the 2nd day after admission. The vomited matter was not faecal until the 3rd day. On the morning of 13th March 1880, the fluid swelling was tapped and about $\frac{1}{2}$ an oz. of sero-sanguineous fluid escaped: this relieved the patient to a certain extent. The case was now diagnosed to be one of congenital hernia with strangulation at the inner ring. On the evening of the same day the vomiting was more constant and severe; the vomited matters were thin, yellowish and distinctly faeculent; hiccup and dry retching were also troublesome: countenance pale and anxious; body covered with cold sweats; pulse small and frequent; breathing hard. Temperature 97.4° F., and the abdominal muscles tense and abdomen tympanitic. All these urgent symptoms indicated the necessity of immediate operative interference. At about $6\frac{1}{2}$ P. M. the patient was put under chloroform and the tumour in the groin was cut down on under antiseptic precautions; it was found to be an unobliterated processus vaginalis containing a mass of partially strangulated omentum which had contracted an adhesion to the surface of the testicle and dragged down a knuckle of transverse colon which was strangulated at the internal ring. The omentum was divided into three portions, each of which was separately ligatured with strong catgut; the strangulated portion was removed and the stump pushed back into the peritoneal cavity. An exploration was made with the finger to ascertain

whether any band or twist existed, but both large and small intestines were found to be normal. The hernial sac (or the unobliterated right processus and tunica vaginalis) was stitched up by catgut sutures, and the external abdominal ring closed by bringing the two pillars into apposition by means of stout silver wire. The integumentary wound was then stitched up with silver and horsehair sutures and dressed antiseptically.

The patient passed a quiet night after the operation ; vomiting at once ceased, and never recurred. He lost the clammy condition of the skin and dryness of his tongue, and within 24 hours his pulse improved in character and rate, breathing became tranquil, and bowels began to move naturally. The silver wire caused tension in the wound, and was withdrawn after 24 hours. The wound suppurated within a few days ; in consequence of this tension the stitches dragged, and when withdrawn the wound gaped. The peritoneal wound had meantime closed up. Suppuration extended into the cellular tissue of the scrotum and caused a small abscess which was laid open. The parts remained aseptic and repair progressed rapidly on subsidence of the suppuration. On the 20th of March the patient complained of pain in the epigastric region where a small indurated and painful swelling was noticed. The swelling was suspected to be caused by the adhesion of the omental stump with the peritoneum. On the 1st of April the swelling became prominent, soft and fluctuating. On examination with a fine trocar and canula the presence of pus was detected, and next day the abscess was laid open by free incision under antiseptic precautions. The abscess was parietal, and was situated between the posterior sheath of the right rectus and parietal peritoneum. It healed up within a fortnight. The original wound gradually contracted and became superficial, and all constitutional disturbance disappeared. The patient had another abscess in the left gluteal region, which opened spontaneously and healed up within a short time. The patient is now quite strong and stout, the wound is almost entirely healed up. There is no fulness in the inguinal canal : no impulse when he coughs, and no descent of hernia in the canal or outside



of it during a fit of severe coughing or on exertion. The testicle has become embedded in a mass of lymph opposite the external ring.

The points of interest in the case were—

1. The nature of the hernial protrusion—an omental mass descending in a congenital sac.

2. The cause of the obstruction,—dragging of the intestine down by the protruded omentum and its doubling up in the internal ring.

3. The aid which puncturing the tumour afforded to diagnosis.

4. The impunity with which laying open the peritoneal cavity, exploring it digitally, ligaturing and excising the omentum, and reducing its stump were performed under antiseptic precautions.

5. The manner in which a radical cure of the hernia had been obtained by sewing together the lips of the sac with catgut and approximating the pillars with silver wire.

DR. MCLEOD thought that this was likely to become the radical operation of the future, but as yet it was only justifiable in cases where strangulation compelled the surgeon to cut down on the sac. He had seen a case in Edinburgh in which Professor Lister had reduced a scrotal hernia into which almost the whole of the contents of the abdomen had been wont to descend : had removed the redundant sac, brought the edges of it together at the outer ring and stitched them with catgut. There was no constitutional disturbance, and the operation resulted in a radical cure as far as that hernia was concerned.

BABOO BEHARI LALL CHUCKERBUTTY had seen a radical cure brought about in the same manner in a case of strangulated hernia in which DR. PARTRIDGE had brought the edges of the sac and pillars together with silver wire stitches. The operation was performed antiseptically.

DR. CAYLEY was of opinion that it was not enough to bring sac and pillars together and get them to unite. It was necessary to bring some structure behind the external ring. PROFESSOR WOOD'S operation accomplished this by pulling outwards the conjoined tendon. According to his experi-

ence this was the only one of the many operations for the radical cure of hernia which accomplished its object. He had seen a man so completely cured of his hernia by Wood's operation, that he was enlisted into the army a year after its performance. Many cases which he had seen had successfully resisted the severest tests.

BABOO LALL MADHUB MOOKERJEE thought that all reputed cases of radical cure should be examined after the lapse of a year. He had seen cases leave hospital apparently perfectly cured, but a descent of the hernia had afterwards occurred.

DR. MCLEOD also exhibited some preparations taken from a case of PYÆMIA which had recently died in the Medical College Hospital. The patient was a healthy male æt. 30, who was admitted 10 days after having sustained a severe lacerated wound of the dorsum of the left foot by the fall upon it of a heavy bar of iron. Two sloughing ulcers existed on the dorsum of this foot, one of which led to comminuted bone. Free incision relieved the tension of the surrounding skin, and under a boracic dressing and careful drainage repair set in. On the 9th day after admission pyrexia preceded by rigors commenced. This was reduced by the use of salicylate of soda, but repeated attacks of fever, ushered in by rigors and terminating in profuse sweating, followed, and prostration gradually supervened with symptoms of pneumonia and diarrhœa, which ended fatally on the 20th day after admission.

On post-mortem examination DR. McCONNELL found the tarsus in a sloughy condition, circumscribed nodules (infarctions) in lungs and kidneys in process of inflammatory softening and a rare condition of prostate described as follows:—“The prostate gland is enlarged and swollen. The vesiculæ seminales on either side present similar conditions, and contain some thick yellow pus. The cellular tissue round the neck of the bladder for the space of about 2 inches is much swollen and of brawny hardness, the peritoneal surface highly injected and vascular. When an incision is made into this part the vesico-prostatic plexus of veins is found much dilated, individual veins being occupied either by firm dark-red cylindrical thrombi or containing thick purulent

broken down blood clot. Their inner surface or lining membrane is swollen very vascular and soft (acute suppurative phlebitis)." Cases of pyæmia, he remarked, were rarer in the Medical College Hospital than they used to be. This was a very typical one, but it was difficult to account for the condition of the prostate, for which no satisfactory explanation could be offered and of which no symptoms existed during life.

BABOO AVINAS CHUNDER BANNERJEE exhibited a preparation showing EMBOLISM OF THE BASILAR ARTERY. The patient, a Malay aged 40, was in hospital for right hemiplegia. There was no aphasia, nor loss of sensibility in the limbs. "The anterior half of the basilar artery is occupied by a firm fibrinous decolorized thrombus which extends a short distance into each posterior cerebral artery: the whole of the basilar artery is much contracted and appears like a cord." The substance of the *pons* and *crura* was softened: the *corpora striata* and *optic thalami* were healthy. All the vessels of the circle were thickened and atheromatous.

ASSISTANT-SURGEON ANODA CHARN KASTAGIR read some REMARKS ON THE SURGICAL TREATMENT OF SCROTAL TUMOURS, WOUNDS AND ULCERS.

Observations on Scrotal Tumour.

1. These, like splenic hypertrophy, owe their origin to malaria. The periodical accretion to their bulk generally takes place on or about the full or new moon-days, or every month,—less about the full, than about the new moon-days.

2. In tidal districts of Bengal and other places, where extensive low alluvial soils are thrown up on one or other side of large rivers, spring tides sink them under water during the full and new moon days; from the fourth day of the moon the water never rises high enough to cover these banks, until the next full moon. During these days such soils are exposed to strong solar heat, and evolution of malaria in abundance is the consequence. In such places malarious fever is endemic, and *splenic enlargement*, *elephantiasis of scrotum*, or *leg*, and *bronchocele* are its usual accompaniments. In Backergunge, Soodaram, Chittagong, Dacca, Furreedpore,

Jessore, and the Sunderban tracts of the 24-Pargunnahs, and even in Calcutta, these diseases are therefore most common.

3. In Dacca scrotal tumour was attributed to drinking of the well water when the water-works had not been introduced there. The well water of Dacca is no doubt unwholesome in quality. Wells there are invariably dug near privies or drains, and, considering that these wells are mostly *katcha*, *i. e.* not protected around by a good masonry wall, it is not unlikely that the water becomes deteriorated by percolation through the soil. Some of these wells are subject to rise and fall with the flood and ebb tide of the Booree-gangà, others get dry during the day by constant drawing of the water for human use, and fill up again to the extent of 3 or 4 feet during the night; an unhealthy emanation is constantly evolved from such wells which, by the way, are as numerous as dwelling-houses in the town, and it is not strange that the people should be subject to fever and to such complications of it as spleen, elephantiasis of the leg and of the scrotum, &c.

4. With regard to their comparative prevalence, it is unusual to see the same person suffering from splenic hypertrophy and scrotal tumour, or swelled leg at the same time; so also elephantiasis of the leg, and scrotum are rarely seen in the same individual. But there are exceptions to this rule, for at this very moment I have got a case of scrotal tumour which was removed in my hospital, weighing 10 pounds after removal; he is also suffering with elephantiasis of the leg. Both his legs are affected slightly, but I think hereafter their hypertrophy will go on rapidly increasing, as if to compensate for the mass removed with the diseased scrotum. Malaria in some shape or other being the cause of this morbid growth, should this man hereafter take his residence in a non-malarious district in the N. W. Provinces, further hypertrophy of his leg will, I believe, be completely stopped. I know a gentleman suffering with goitre, who informed me that every time he went to a certain district in the N. W. Provinces, his swelling in the neck decreased, or at least it was stationary; but as his business lay in

Bengal, every time he returned here the swelling increased; now it has acquired a large size.

5. As regards sex, it may be said that goitre is as frequent among females as scrotal tumour among males.

Elephantiasis of the leg is more common among females than males. Splenic hypertrophy is more prevalent among males; and still more among children of both sexes. Like the scrotal tumour in males, females are often seen to suffer with ovarian tumour as the result of malaria, the periodical increase corresponding with the fortnightly tidal or lunar influence. In Burrisal I removed the enormously hypertrophied labia minora of a female, who informed me that the swelling increased with every full and new moon, when the tumour was also tender on pressure; and she also suffered with rheumatic pains of her body, or with distinct fever at the time.

6. The whole population of the Delta of the Ganges may be divided into those suffering with spleen, scrotal tumour, hypertrophied leg, or bronchocele. The number quite free from every one of these sequelæ of malaria, bears a very insignificant proportion.

7. Hydrocele is an usual accompaniment of scrotal hypertrophy. As regards the period of supervention, the former is generally anterior in date to the latter. When a healthy tunica vaginalis is dragged in all directions by an enormous tumour, secretion is poured into its cavity, as if to fill the vacuum thereby produced.

8. Certain types of endemic malarious fever have the same effect on the scrotum as a severe attack of scarlet fever or small-pox is often seen to have on it. Fresh effusion takes place into the areolar tissue of the scrotum with every attack of the fever fortnightly, or monthly, as stated before, and the areolar tissue in an enormously large tumour acquires the toughness of fibrous tissue.

Treatment.

9. Extirpation of the scrotal tumour is the only treatment for the cure of the disease. Ordinarily the penis and the testes are preserved denuded of their coverings, and the whole of the abnormal mass, carefully dissected off, is removed

by one sweep of the knife. In case of hydrocele a portion of the diseased tunica vaginalis may also be removed with the fluid to prevent future accumulation by the abolition of its cavity. One or both testes may be also removed with the mass if diseased, in which case it is necessary first to tie the cord very carefully. It is a good precaution to squeeze in the blood from the tumour and then tighten its neck by Es-march's bandage during the operation, to make it bloodless. But the same may be effected by ordinary India-rubber belts such as are sold in bazaars ; after the operation, large blood vessels can be secured by ligatures ; the smaller ones need only be twisted with a forceps.

There is little difference between the after-treatment of stumps and that of wounds and ulcers, which therefore will be considered together.

10. In a case of scrotal tumour accompanied with hernia, two methods of procedure are at our command : The hernia being radically cured by Wood's operation, the tumour may be afterwards removed by a distinct operation ; this is quite safe. Others carry the patient on the operating table, reduce the hernia and prevent its descent by a properly adjusted truss, and then remove the tumour at once. This is attended with great risk to life by the extension of inflammation to the peritoneum through the hernial sac, which during the operation may be accidentally wounded or divided.

11. Death after removal of scrotal tumours is generally the effect of shock, surgical fever, peritonitis, exhausting discharges, or secondary complications. Of 17 cases of scrotal tumour which I have removed in the North Suburban Hospital, one died from pneumonia and two from peritonitis ; the last two were complicated with inguinal hernia. The late Dr. Gayer advised me to put a truss to prevent the descent of the hernia, and then to remove the tumour, which I did, but the case ended fatally from peritonitis.

12. The 2nd was complicated with hernia, partly incarcerated and partly reducible, each in a separate sac ; the latter was radically cured by Wood's operation. I had him afterwards examined by two European surgeons, of whom one was a practitioner of good experience. They were of opinion that

there was no other hernia, and the operation might be safely performed ; with their kind aid I extirpated the tumour, which weighed 40 pounds after removal. While extricating the right testis from the mass, a separate hernial sac was visible on its outside, which being accidentally opened was found to contain about $\frac{1}{3}$ rd of the jejunum in its cavity ; the sac being separated from the tumour, was returned into the abdomen after the intestines had been separately reduced, and then the opening was closed by catgut sutures and anti-septic dressing, but the man died on the 4th day with symptoms of peritonitis. The neck of the tumour was 6 inches in diameter, in which the neck of the hernial sac was buried, and thus it not only escaped our detection, but the patient himself assured us that there was no other hernia, or feeling of discomfort in the part.

13. Scrotal tumours of small size are often removed by a process of spontaneous gangrene, by which the penis and the testes are completely denuded of the abnormal growth, leaving a healthy granulating surface below.

I have seen two such cases in Baranagore, of which one was treated in the hospital.

14. Here I propose to give a short account of local after-treatment of stumps after surgical operations, as also of ulcers and wounds generally as adopted in Mofussil hospitals and dispensaries, where it is ruled by Government that patients of all description should be principally treated with indigenous drugs and country appliances for reduction of expenditure.

Such things therefore as boracic acid, carbolic acid, thymol and carbolic gauze, carbolized catgut ligature, carbolized tow, an æther spray, &c., &c., must not be thought of in Mofussil dispensaries, and necessity being the mother of invention, the following mode of treatment is generally adopted.

(a.) I make antiseptic plasters with a dram of tar bought from the bazáár, mixed with 1 or 2 ounces of simple ointment spread on linen ; a clean and fresh surgical wound is completely covered with 3 or 4 layers of this plaster, a cotton pad is put over it, and then the whole is gently bandaged up ; this dressing is not opened for a week, or until the part swells, or the dressing is soaked with discharges.

(b.) When the dressing is opened the stump or sore is sponged and cleaned with pieces of dry and clean linen or cotton: lint being costly, is not used. Then fresh tar plasters are again put on as before. During the dressing of course there is no *æther spray* to be used and no carbolic acid lotion to wash the part. With regard to the latter I may say that within the last ten years I do not remember to have ever used water—simple or carbolized—for washing sores or wounds, unless the latter had been accidentally covered with sand, clay, or any other foreign substance. The reason is:—

1st.—The dressers invariably spoil the patient's bed by soaking it with water and discharges, which therefore require to be changed once or twice every day; and in an institution where there is scarcely as many beds as there are patients, this is no common difficulty.

2nd.—Filtered water cannot be had in the Mofussil easily; carbolized water is a costly item in an institution in which the whole year's supply often does not exceed a pound.

3rd.—Wounds dressed without water are less disposed to slough than when it is used simple or medicated. Besides where there is want of action in a sore, cold water makes it worse; warm or tepid water produces overaction in an inflamed or irritable sore, and in a healthy sore it may assist in the exuberant growth of granulation and proud flesh. I have therefore given up the use of water in dressings generally.

(c.) It may be asked now, how long a wound requires to be treated antiseptically to prevent supervention of unhealthy inflammation in it? As a rule, I think such dressings may be omitted as soon as a wound becomes a granulating surface. I have seen persons with extensive sores on their bodies going about in the streets, the same being simply covered with a bit of dirty linen for days together, and yet no serious change takes place in them. Directly a wound becomes granulating, it appears to have a protective membrane or covering which preserves it from septic influence.

Antiseptic dressings may therefore be dispensed with at this stage, and others, which help the contraction and cicatrization of the sore, adopted in their place.

(*d.*) Pressure is the most powerful agent for expediting contraction and closure of sores and sinuses, where it admits of application: after crucial division of a carbuncle on the back or thigh, firm pressure with pad and bandage speedily removes the sloughs in 3 or 4 days and produces a healthy surface below, thus doing away with the necessity of removing the same by scissors, or by strong escharotics. It is therefore most welcome and agreeable to old and young patients and females, especially in private practice, who fear painful dressings, and for that reason only often change the medical attendant.

(*e.*) Subcutaneous sinuses may be abolished in 24 hours by firm pressure along their tracks; even sinuses running under superficial muscles, and those in the axilla or groin, may be thus closed by firm pressure along their course. The stump of an amputated scrotum containing two such tender organs as the testes, even admit of sufficient pressure to expedite its contraction and cicatrization.

(*f.*) Here I shall conclude with the remark that when an ulcer is about to close by cicatrization, rest of the part, and its free exposure to air, protected from the biting of insects and flies, by being under a mosquito curtain, is superior to bland or oily dressings, &c., for its final closure.

BABOO BEHARI LALL CHUCKERBUTTY remarked that, according to his observation, there was no certainty regarding the period or frequency of occurrence of attacks of fever in cases of elephantiasis. They might occur weekly, fortnightly, monthly, bi-monthly or at irregular intervals. He had seen a case of elephantiasis associated with enlargement of liver and spleen. It was operated on successfully by Dr. Partridge. The enlargement subsided during convalescence, and the man was now quite well. He could not recognise any connection between ovarian and scrotal tumours. The organs were not homologous. Scrotal and labial tumours were anatomically and pathologically comparable, but not scrotal and ovarian. Dr. Partridge had introduced a practical improvement in operations for scrotal tumour. When the perineal surface was limited he stitched back the skin flaps in order to make room for the testes. This plan

answered very well. He approved of treating carbuncles by pressure, and had seen large ones cured by strapping without the use of the knife. He had seen two cases of scrotal elephantiasis in which elephantoid swelling of the legs occurred after the scrotal tumour had been removed.

BABOO TARINI CHURN BOSE observed that the fever only occurred at the commencement of the disease fortnightly or monthly. In advanced cases fever was commonly absent. He thought that when an ulcer was cicatrizing the open treatment was best, but sores healed up more speedily under antiseptic management.

MR. WALLACE considered support better than pressure in the treatment of carbuncles. He had recently seen a case in Edinburgh where œdematous enlargement of the scrotum resembling elephantiasis had followed destruction of the inguinal glands by suppuration. Mr. Bell had excised pieces under the belief that the pressure and contraction of cicatrization would restore the tone of the lymphatics.

DR. CAYLEY entertained great doubts regarding the malarial causation of scrotal tumours and elephantiasis, or their etiological association with splenic enlargement. He had seen elephantiasis under conditions where malaria was almost absent, in the hill tracts of Orissa for example, on dry laterite soil. Goitre certainly did prevail to some extent in malarious Bengal, but its prevalence was trifling as compared with the Himalayan terai, the slopes of the mountains, and the plains between them. In Yarkand, which was a dry tract without rain or malaria, the disease was very common, and in many parts of Switzerland, where also malaria was absent, goitre was endemic. As regards the periodicity of the so-called elephantoid fever, he had not found a monthly recurrence invariable or even common. It sometimes did not come oftener than once or twice a year. Nor did the attacks correspond with the changes of the moon which did not represent any particular event in physical nature, but were merely conventional terms. His experience was that the local conditions precede the fever, and this would contra-indicate causation by a general influence such as malaria. Hydrocele was certainly very frequently associated with

scrotal tumour, but it was also very common in natives of all classes quite independently of scrotal elephantiasis. In one case he had found it necessary to amputate an elephantoid leg, the incisions passing through the diseased tissue. The stump took months to heal. It discharged a clear oily-looking fluid for a long time, but eventually closed up.

DR. McLEOD had repeatedly seen enlarged spleen and elephantiasis associated in the same person, as also elephantiasis of scrotum and leg. He had never observed compensatory swelling of the leg on the extirpation of the scrotal swelling, on the contrary the recumbent posture, aided in some cases by elastic bandaging, had caused very marked reduction of the size of the extremities in such cases. The association of hydrocele and hæmatocele with scrotal elephantiasis was a well-known feature of the disease, and explainable by the fact that direct communication existed between serous sacs and the lymphatics, so that the same lymph stasis which caused dilatation of the areolar lymph spaces also led to distension of serous cavities. There was, however, in elephantoid tumours something more than mere stasis and hyperdistension of lymph spaces and serous sacs; there was neoplasm—development of embryonic forms of connective tissue and hypertrophy of cutaneous muscular tissue elements. It was this neoplasm which justified extirpation and rendered it improbable that pressure, puncture and other expedients could produce a radical cure. He had, however, seen elephantoid induration over the pubis and lower abdominal wall in a case of extirpation of scrotal elephantiasis disappear. He agreed with previous speakers regarding the absence of any definite chronicity or correspondence with moon phases in the fever. It was also remarkable that extirpating the local growth caused disappearance of the fever. This was another strong justification of resort to operation in such cases, as well as an evidence that the febrile disturbance was rather secondary than primary. As regards the treatment of wound and ulcers, the same principles were not applicable to both. Drainage was an essential in wound treatment, but the discharges from ulcerated surfaces found their way into and outside of dressings

without special arrangements for drainage. The plan proposed by Mr. Kastagir was defective in making no provision for drainage. Next to the strictly antiseptic system of treating wounds, Dr. McLeod believed the open plan was the best ; next to that perhaps the so-called dry or absorbent plan. No system, however, in his experience, equalled out and out Listerism, under which wounds and sores healed physiologically without the intervention of any pathological process. Repair was more rapid and certain under this than any other system, and constitutional risks were eliminated.

Granulations were not so impervious as Mr. Kastagir thought. Some granulations absorbed readily, and it was a safe principle of practice to credit all with some measure of absorbing power.

DR. COATES was interested in Mr. Kastagir's views regarding tidal influences, because he had, after the Cyclone, travelled along the deltaic seaboard and visited the deltaic islands. He had found very little elephantiasis in Sundeeep, Dukinsabazpore, Hatia and other islands at Backergunge, Noakhally, and Chittagong where tidal exposure was excessive. On the other hand elephantiasis was very common on the Madras and Orissa coasts, where very little tidal exposure occurred. Even fevers were rare in these islands. The chandals of Burrisaul live on swamps where large muddy surfaces are exposed to the sun heat in the hot season. Little or no fever, spleen or elephantiasis prevail among them. Goitre, elephantiasis and lymphatic fever are, moreover, well known to prevail extensively in districts and localities far removed from tidal influences.

BABOO RAKHAL DAS GHOSE had visited the tracts referred to by Dr. Coates, and was in a position entirely to confirm his statement regarding the comparative absence of fever, elephantiasis and spleen. The so-called elephantoid fever was very different in type from any malarial fever, in that it very rarely was intermittent or recurred. The patient had one attack at a time lasting for two or three days, and then got well. This fact was so well known that people seldom took medicine for it, and quinine had very little influence over it.

BABOO AVINAS CHUNDER BANNERJEE had never found quinine check or shorten elephantoid fever.

DR. CHAMBERS related a remarkable case of elephantiasis of the leg in a female 60 years of age. She had lived in Serampore, Howrah, and Dum-Dum, and the disease was of 4 years' duration. When he saw her one of her legs had attained enormous dimensions, so much so that she was unable to walk.

There was a large ulcer 4×3 inches on the leg, which had been caused by a blister, which discharged large quantities of clear fluid. He treated the case by puncture, strapping tightly with emplastrum ammoniaci *c.* hydrargyri and bandaging. Under this plan the swelling entirely disappeared. Three other cases of elephantiasis—one of the leg and two of the scrotum—had been similarly treated by him with excellent result.

BABOO ANODA CHARN KASTAGIR in reply maintained that these forms of fevers were periodic and associated with the changes of the moon. He had himself suffered from chronic fever in which he had noticed a lunar periodicity. Among his countrywomen menstruation and parturition were popularly held to occur more frequently at new and full moon than at any other time.

The following gentleman has become a member of the Society :—

BABOO OMRITO KRISTO BOSE, L. M. S.

THE CALCUTTA MEDICAL SOCIETY.

The sixth meeting of this Society was held at the Medical College on Wednesday, 9th June, MOULVIE TAMEEZ KHAN, KHAN BAHADOOR, presiding.

DR. D. O'CONNELL RAYE exhibited a case of MOLLUSCUM FIBROSUM. The subject was an adult female æt. 22, a resident of Jehanabad, belonging to the *telee* caste. The following statement of the case has been drawn up by Assistant-Surgeon NITAI CHARN HALDAR :—

The patient belongs to the labouring class. She was born with a small nodule on the inner and upper aspect of her left armpit. The small nodule did not increase for several years, but at the end of four or five years, she as well as her parents noticed a slight increase in the bulk of the nodule; but as it was attended with no pain whatever, her parents took no notice of it. At the end of some ten years her mother, who also had been suffering from a similar affection, died, when she again noticed an increase in the bulk of the tumour. Henceforth it began gradually to increase in bulk until it assumed the size of a foetal head: it then ceased to grow, and remained stationary for six years. Last year she suddenly noticed a severe pain in the tumour, and from that time forward it began to increase in size until it assumed the present form. She has two younger brothers who are all free from this affection. Her mother had similar nodular growths all over her body, but none of them assumed so large a size. Cannot say anything of her father, as he died before her birth: denies having had any venereal disease: was not salivated at any time.

Present condition.—The tumour is situated beneath the left arm, and is attached to it by a broad base along the lower border of the biceps muscle: the attachment extends from the left armpit to the corresponding elbow-joint; it is broad and thin above near its attachment to the arm, is bulky below, and is of a pendulous character. It is from

about 8 or 9 inches in breadth, and about 12 or 13 inches in length, and is flattened from side to side.

The tumour is of a greyish dark colour below and of a lighter colour above, where blue veins may be seen coursing over it immediately below the arm both on its anterior and posterior aspects. The tumour is pendulous, its skin has a puckered appearance, and is quite adherent at its lower part where the tumour is bulky, but is loose at its upper part. The sensibility of the tumour is somewhat dull.

The anterior surface of the tumour is concave, and presents a slight hollow in its central part. On the posterior part of this depression the skin of the tumour is sacculous and loose, though thick and nodular. The skin of this hollow part is very thin, of a greyish colour, and is quite adherent. Its anterior margin is thick, rounded and nodular in character. It is bounded below by an uniformly round, thick and nodular border.

The posterior surface is concavo-convex. It presents an irregularly rounded cicatrix on its anterior part, which is the result of a sloughing ulcer which she had been suffering from last year. There are some vesicular eruptions in its central and upper part which are very itchy, and exude a thin serous fluid. Several other small cicatrices can be seen over it.

The tumour is all over nodulous, and small hard masses can be felt in it. It is not at all painful, but she gets fever now and then, and each attack of fever is attended with severe pain and ulceration in the tumour. The axillary glands are not affected : they may be felt in their usual situation.

Small nodular growths are seen all over her body : those on the face look like pimples. There are two situated in the palm of the left hand : the larger of the two is seen just over the ball of the left thumb, the other, smaller, on its inner aspect. Both of them are soft and elastic, and are of a reddish colour : no blood vessels can be seen coursing over them. The sensibility in them is somewhat dull : they are all quite painless.

There is one situated on the posterior-lateral aspect of the chest, below the left scapula. It is conical in shape, and is

of the size of a large nut : it is extremely soft and elastic, and is quite painless. It has a reddish tint, and its sensibility, like that of all the other nodules, is dull. These nodular growths over her body have made their appearance for the last two years. The patient is well nourished : pulse strong : no splenic or hepatic enlargement : monthly courses regular : has no children : tongue moist and clean : appetite good.

DR. RAYE observed that it was worthy of note that the condition was hereditary and congenital. He had seen a similar case operated on by Dr. Farrell in Dublin. He intended removing the large tumour in this case, but would not interfere with the numerous fibromata scattered all over the body. The lumps on the palm were unusual ; the palm of the hand and sole of the foot were rarely affected by this disease.

[The tumour has been successfully removed since the meeting, and the patient is doing well. The mass weighed 7 lbs.]

DR. BOWSER had removed two large pendulous tumours of a similar kind from the labia of a female in Rungpore. They were so large that they pushed each other aside so as to lie one in front of the other. These were also associated with small tumours all over the body.

BABOO LALL MADHUB MOOKERJEE had seen a woman from whom a similar tumour had been removed. It also hung from the arm. There were no fibromata on the body of this person. He had also met with a patient afflicted with double cataract who had molluscous tumours all over the body. He operated successfully on both eyes.

DR. MCLEOD drew attention to several interesting cases of a similar kind to that exhibited by DR. RAYE described by DR. JAMES WISE, late Civil Surgeon of Dacca, and published in a very interesting compilation by Drs. FOX and FARQUHAR on certain endemic skin and other diseases of India and hot climates generally. Several of DR. WISE's cases and one contributed by DR. BAINBRIDGE, Civil Surgeon of Dhulia, resembled very closely the case before the meeting. In three of DR. WISE's nine cases the disease was hereditary.

BABOO KANNY LOLL DEY, RAI BAHADUR, exhibited certain preparations from a case of ACUTE CARBOLIC ACID POISONING, of which the following particulars were present-

ed to the Society. The case was, as far as he was aware, the first that had ever come under the observation of a medical man in this country :—

A Hindu cooly attached to the Babughat Commissariat Godown near Hastings, was sent to the Baligunge Cantonment with a box containing some bottles, among which there was a bottle of strong carbolic acid.

While carrying the load, the man is supposed to have thought that among the bottles there must be one of spirits of wine, but in fact there was no such thing among the contents of the box. The cooly however, on the strength of that supposition, must have poured down his throat a certain quantity of the fluid from the strong carbolic acid bottle : this was evidenced by the mark of the acid around his mouth.

The cooly, instead of carrying the load to its destination, went homeward, and on the way, at a little distance from his house, he dropped down, foaming at the mouth, and became quite insensible. Assistance was rendered to him by his relatives by sprinkling water on his face, but to no effect ; he died convulsed on the spot. The time of the unfortunate man's death was 4 P. M. The distance from the Commissariat godown to his house was nearly half an hour's walk ; the interval between the time of taking the carbolic acid and death must have been not more than thirty minutes.

The post-mortem examination was held on the next day, at 1 P. M. in the theatre of the Campbell Medical School, about 20 hours after death.

The body was well preserved. No marks of even commencing decomposition.

The body appeared to be that of a man of about 32 years of age, well formed and muscular : no cadaveric odour : rigor mortis all over the body : eyelids closed : pupils slightly contracted : lips closed, teeth clenched ; the tongue lay behind them. A brownish patch extended all round the mouth and downwards to the chin ; two marks of a similar nature were observed,—one on the chest and the other a little below the umbilicus (both about half an inch in length and a quarter of an inch in breadth.) No trace of external violence observed.

The result of the internal examination was—that on opening the body a strong smell of carbolic acid was noticed.

Head.—On cutting the scalp a large quantity of dark fluid blood escaped. The sinuses of the dura-mater were full: on being cut through a large quantity of the same dark fluid ran out. The brain was found congested; on section punctæ vasculosæ were prominently seen. Smell of acid noticed in the ventricles, which contained neither serum nor sanious fluid. The choroid plexus and velum interpositum were found rather full and gorged.

Thorax.—The lungs were engorged with blood: the trachea was found much congested. Both the sides of the heart were full of dark fluid blood containing small coagula.

The mucous membrane of the mouth and œsophagus was white, hardened, and corrugated; some grains of boiled rice were found within the œsophagus.

The stomach was also found white, contracted and thickened. The mucous membrane was thrown into ridges which were white on the summit but less so in the furrows. Stomach contained some undigested food mixed with strong acid giving it an oily appearance.

The duodenum was somewhat congested and thickened. No characteristic change in the jejunum or ileum.

The mucous lining of the colon was denuded of its epithelium; the rectum was found slightly congested and thickened.

The liver and the spleen were congested.

The kidneys were found highly congested.

The bladder was full, containing urine of a pale color with mucous flakes.

The blood in the large vessels was fluid and of a dark color.

Observations.—The post-mortem examinations of 20 cases of poisoning by carbolic acid, given in Woodman and Tidy's work, show that some of the signs present in the case under notice were absent in many of the cases therein related.

The chief points worth remarking are, that the brain may be normal; the cavities of the heart may be empty, or the left side may be found full of blood.

The bladder is generally quite or very nearly empty, any urine present being of a dark color.

The average time of death noticed in these cases was from 30 minutes to 4 hours : 10 minutes being the shortest recorded period, and sixty hours the longest.

Poisonous dose.—6 to 7 minims of strong acid may cause dangerous symptoms. The deaths on record arose from a dose of 1 to 2 ounces, which of course was far in excess of what is needed to destroy life.

The external application as well as its use as an injection has proved fatal (vide *British Medical Journal*, February 1868).

In the case under observation the dose was upwards of 2 ounces.

These accidents generally occur in the case of persons addicted to ardent spirituous drinks, often by mistake.

DR. MCLEOD remarked that the very interesting case just read was an example of acute poisoning by a large dose of carbolic acid ; but there was another class of cases which had come into prominence during recent years, in which disagreeable and even fatal results had been caused by the use of carbolic acid as a surgical dressing. He had met with one very well marked instance of this in a man from whom he had removed a scrotal tumour. The wound was dressed with carbolic oil. The patient began to suffer from gastro-enteric irritation and considerable nervous depression, and his urine became smoky. The carbolic acid dressing was discontinued, and the symptoms disappeared. The wonder was, considering how freely and frequently carbolic acid was used in surgery, that effects of this kind did not oftener arise. He never used carbolic acid, or a solution of it in water or oil as a direct application to raw or granulating surfaces, and seldom as an injection. Professor Lister recognizing the irritating properties of this acid, and the risk of its being absorbed, interposed an impermeable "protective" between the surface of the wound and the carbolized dressings. In the Medical College Hospital they were in the habit of using "boracic gauze" (boracic acid ointment spread on muslin) with the same object. It seemed to answer well, and fulfilled the further object of supplying a closely applied antiseptic in case of disturbance of the looser outer dressings. Injections of wound and abscess cavities with carbolic lotion

should seldom be resorted to. If the wound or abscess cavity was aseptic they were unnecessary, and if putrid, other safer substances such as iodine, chloride of zinc, permanganate of potash, &c., might be employed.

DR. RAYE had recently had a Eurasian woman under his care, whose sinus was injected daily with a solution of carbolic acid. Persistent vomiting and dark discoloration of urine, which disappeared on standing, manifested themselves. On changing the injection for one of chloride of zinc, these symptoms disappeared.

BABOO GOPAL CHUNDER CHATTERJEE had treated a case of burn with a mixture of carbolic and carron oils. The urine became discoloured and nausea and vomiting set in. Boracic acid ointment was substituted, and the symptoms disappeared.

BABOO LALL MADHUB MOOKERJEE had seen similar symptoms in a case of extirpation of the eyeball which had been dressed with carbolic oil. The symptoms appeared 4 or 5 days after the operation, and lasted for two days.

DR. GOOPTA remarked that, considering the great frequency with which carbolic acid had been used as a direct application to wounds, it was very extraordinary that symptoms of poisoning had so rarely been noticed.

BABOO KANNY LOLL DEY had seen snakes killed with carbolic acid. The tetanic symptoms were the most prominent. He knew of a case in which 3ss. of carbolic oil had been taken. Symptoms of irritant poisoning set in which were treated with albumen, &c. The patient recovered.

The ADJOURNED DISCUSSION ON ACUTE OEDEMA was opened by DR. MCLEOD, who remarked that although he was sorry to notice that Dr. Chambers was absent, still, as the discussion on his paper had been twice postponed, it was desirable to bring it to a termination. The salient points in Dr. Chambers' paper were, the Society would remember,—

(1.) That a severe epidemic outbreak of fever had been raging in Calcutta.

(2.) That this fever was relapsing fever which had been imported from Madras, and

(3.) That the so-called Beri-beri which had prevailed in

Calcutta last cold weather was a variety or modification of relapsing fever, and due to the same cause.

These were the points before the Society, and regarding which the opinions and experience of the members were desirable. For himself, he confessed that, notwithstanding careful enquiry, he had been unable to satisfy himself that any epidemic of fever had recently prevailed or was prevailing in Calcutta. On the contrary the city had enjoyed a comparative immunity from fever during the past cold and hot seasons. Dr. Chambers' description of cases failed to convince him that the disease which he described was relapsing fever, and two cases which Dr. Chambers had been good enough to show him as cases of relapsing fever, did not seem to him to be instances of that disease. No other medical man in town had, as far as he was aware, seen a case of relapsing fever in Calcutta, and on the whole he was forced to the conclusion that relapsing fever had not existed and did not exist in the town, and that Dr. Chambers' cases were not cases of relapsing fever. Such being his belief, he could not assent to the view that the disease known as acute oedema or *beri-beri* had any relation whatever to relapsing fever. It appeared to him to be a disease *sui generis* and more easy of differentiation from other diseases than most maladies met with in practice.

BABOO LALL MADHUB MOOKERJEE had been in charge of the Chitpore Famine Hospital in 1866 during the Orissa famine, and though he had seen hundreds of cases of fever, he was certain that none of them was a case of relapsing fever. He was equally positive that he had not seen any case of so-called *beri-beri* among the patients treated in his hospital at that time. Dr. Chambers' description appeared to him to be a conglomeration of the symptoms of several distinct types of fevers, and he agreed with Dr. McLeod in thinking that no relation, etiological or pathological, had been demonstrated to exist between relapsing fever and *beri-beri*.

DR. COATES had served in Orissa during the famine of 1866, and had subsequently witnessed a severe epidemic of relapsing fever at Lahore in 1867. He was in a position to state

that relapsing fever did not prevail in Orissa in 1866. Relapsing fever was an extremely contagious disease, and if it had occurred in Dr. Chambers' practice, it was very remarkable that the disease had not been seen by any other medical man or in the hospitals. Dr. Coates had also seen *Beri-beri* among the Madras sepoy's at Cuttack when in temporary charge of the Madras regiment quartered at that station. He had seen cases of so-called acute oedema in Calcutta in 1877-78, and what he then saw did not appear to him to be the same disease as what he had seen among the sepoy's. He had not met with, nor heard of, any outbreak of relapsing fever in any part of Bengal.

DR. RAYE had seen a good deal of relapsing fever which is a common disease in Ireland, but he had never heard of *beri-beri* being in any way associated with it.

DR. BOWSER had not met with any case of relapsing fever in his practice.

DR. MCLEOD read a letter from DR. SMITH resigning his office of President. Under instructions from the Executive Committee, Dr. Smith had been asked by him to reconsider his decision and retain the office as long as he remained in Calcutta, but without avail. Under the circumstances the election of a new president became necessary in accordance with Rule VIII. A ballot was taken with the following result.

DR. CAYLEY elected President and DR. COATES, Vice-President in Dr. Cayley's place.

BABOO LALL MAHUB MOOKERJEE moved that an expression of the appreciation by the Society of his efforts in organizing it, and of the urbanity and success with which he had presided over its earlier meetings, and of the very great regret entertained by its members that he had found it necessary to resign the office of president, be conveyed to Dr. Smith. He further moved that Dr. Smith be elected an honorary member of the Society. This motion was seconded by Baboo Kanny Lall Dey, Rai Bahadur, and carried with acclamation.

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THE CALCUTTA MEDICAL SOCIETY.

The Seventh Meeting of the Society was held at the Medical College on the 14th of July, Dr. CAYLEY presiding.

DR. BOWSER exhibited a drawing of the case of pendulous labial tumour to which he had referred at the last meeting. The subject was a Mahomedan female, æt. 30; she was well nourished. The growths were of 10 years' duration. The right one weighed after removal 17 lbs., and the left 12 lbs. They were removed simultaneously on the 28th of January 1870, and the patient was discharged cured on the 12th of March. The whole of the skin of the body was nodulated like a citron (*cofree guava*).

DR. MCLEOD showed the right forearm of a child of 2½ years' age which he had amputated on account of MEDULLARY CANCER. The disease did not extend beyond the wrist or elbow joint, but involved all the structures of the forearm. It was first noticed in July 1879, and gradually attained its present large size; its recent growth being very rapid. As it was considered desirable to remove the origins of the flexor and extensor muscles from the condyles, the humerus was divided at the junction of the middle and lower thirds; the operation being a modified circular. It was performed under strict antiseptic precautions on the 10th of June. Catgut drains were used, and they were stitched to the surface of the muscle before and behind the bone and brought out at each angle. The edges were very accurately brought together with horse hair. The arm was, after being dressed, enveloped in a mass of cotton wool and bandaged to the body, and the patient was taken home. The wound was dressed on the 2nd, 4th, 7th, 10th and 13th days. It united by primary adhesion without inflammation or suppuration. The part of the drain which lay outside of the wound was found on the dressing on the 10th day, and the stitches were also removed on that day. There was very slight fever during the first three days.

Dr. McLeod remarked that in addition to the interest of so young a child subjected to so severe an operation having, under the antiseptic system, been treated as an out-door patient with such very satisfactory result, the case was important as an illustration of what was not very generally acknowledged in surgical text books, namely, the very considerable prevalence of malignant disease in India. Paget, in his lectures on Surgical Pathology, states on the authority of Walsh that cancer is very rare among the patients of the Calcutta Hospitals, and Erichsen in the latest edition of his work on the Science and Art of Surgery, remarks that the disease is known in India as if it were uncommon. His own experience was, that the disease in all its forms was exceedingly common in Bengal. He had seen it in all ages and both sexes. Large medullary tumours were not uncommon in children, cancer of the breast occurred among women, and epithelioma of the penis was very frequently met with. This was a point regarding which the Society might contribute valuable information.

DR. CAYLEY remarked that his own experience quite coincided with DR. MCLEOD'S. He had met with very numerous cases of cancer in hospital practice. He had brought a preparation of a LARGE MALIGNANT TUMOUR OF THE FEMUR which had given rise to some difficulty in diagnosis. The subject was a Hindu boy of 15, who was admitted into the Mayo Hospital on the 10th of February. There was a history of a fall sustained in August 1879. He became lame shortly after this event, and soon noticed a swelling on the outer side of the left thigh. On admission the thigh was flexed, the femur elongated, and the swollen part painful. No fracture nor dislocation could be detected. The circumference of the thigh was greatly increased ($20\frac{1}{2}$ inches at groin against 12); superficial veins dilated; glands enlarged. Patient was cachectic and anæmic. There had been œdema of the left foot and scrotum. The swelling fluctuated, and was aspirated on 15th March. Only a little sanguineous serum and fibrinous shreds issued. On two subsequent occasions aspiration was resorted to with the same result. The surface was warmer than the rest of the body. Temperature varied from 99° to

103·2°, with evening exacerbations. Palliative treatment was resorted to. The patient gradually sank. The tumour was carefully examined by Dr. MacConnell, who found it to be a gigantic spindle-celled sarcoma of the large-celled variety. It appears to have been developed from the periosteum covering the trochanter and neck and from the cancellous tissue of the trochanter. There was no definite limit to the growth, and at some places the soft parts, fasciæ muscles, &c., were extensively infiltrated. There was no evidence of injury to the bone.

The tumour was very vascular.

The microscopic appearances were as follows :—

“The main bulk of the tumour is highly cellular. The cells are large spindle-shaped or round with distinct and considerable sized nuclei occupying the greater part of the protoplasm. Some cells are bi-nucleated, and here and there are found a few giant or myeloid cells, but these are very few indeed as compared with the round and spindle-shaped cells ; and of the two latter the spindle-shaped cells predominate. There is no stroma and no formed intercellular tissue.”

There was no deposit in glands or viscera, nor cavities containing blood in the tumour.

DR. BOWSER had had nineteen years' experience in many districts of Bengal, and had found that cancer was a very common disease.

BABOO A. C. KASTAGIR confirmed this statement. He had also served in the N. W. P. at Muttra, and seen a great deal of cancer there ; had removed labia, breasts and penes affected with the disease.

DR. MCLEOD remarked that the next preparation which he would show—A LARGE POPLITEAL ANEURISM—was an example of what he believed was a rather uncommon disease among the natives of India. The patient was a young Hindu æt. 25, who five years ago had suffered from syphilis. He had injured his left knee 2½ months before his admission into hospital. A pulsating swelling formed which under the influence of long walks which he had been compelled to take increased rapidly. On admission there was a large fluctuating swelling behind the knee-joint which also bulged

laterally and evinced distensile pulsation, thrill and bruit. Pressure on the femoral abolished these and reduced the tension of the swelling. The knee-joint was semi-flexed, and foot cedematous and numb. The fluid was evidently very near the surface. It was thought best, under the circumstances, to ligature the femoral at once, and this was done at the apex of Scarpa's triangle on the 16th May. The operation was performed antiseptically, two catgut ligatures were placed on the artery above and below a large branch which had been divided in cleaning the vessel. A catgut drain was used. The wound healed by first intention in seven days. Pulsation was immediately abolished in the tumour and never returned, but no solidification took place. A patch of gangrene, about 2 inches in diameter, appeared in a few days on the most prominent part of the tumour just behind the biceps tendon. An antiseptic dressing was put on, and changed every 4 or 5 days, and the patient carefully watched. The slough was found to be cutaneous. It remained sweet and gradually melted away; cicatrization took place beneath it except at its centre. On the 9th July, 54 days after the deligation of the femoral the dressings were found blood-stained, and a tiny stream of venous blood was seen issuing from under the remains of the slough. This became a good-sized jet on pressing the swelling. The patient was chloroformed at once, the limb raised to empty it of blood, and an Esmarch's band bound tightly round the thigh. The aneurism was laid open. It was found to be full of grumous brick-red clot, perfectly sweet but in process of disorganization. There was a small quantity of firm fibrinous clot in the neighbourhood of the arterial orifices. The artery were searched for and tied above and below. The band was loosened, but the sac filling rapidly with florid blood, it was retightened, and amputation above the condyles by a modification of Carden's plan at once performed. It was found on dissection that the ligatures had been placed on the vein which was much thickened, the surrounding matted tissues simulating a sheath. The artery had contracted somewhat, but opened by two large funnel-shaped orifices about an inch apart into the tumour.

The sac retained a special coat to its inner aspect, but externally and posteriorly was formed of the tissues of the limb matted together and strengthened by lymph.

The patient is making a favourable recovery. Had a more careful search been made, the artery could easily have been found ; but the vein having once been isolated and tied, amputation became imperative. Indeed the best authorities stated that amputation under the circumstances of this case gave the best chance of life. The case was interesting—

1st.—As an illustration of external aneurism in a comparatively young subject caused by syphilitic disease of the arteries.

2nd.—On account of the circumstance that ligature of the femoral though it abolished pulsation did not produce consolidation in eight weeks.

3rd.—As an evidence of how, under antiseptic precautions, the process of gangrene causes no irritation. Cicatrization took place beneath the gangrenous slough. Had the antiseptic treatment not been adopted, it is probable that perforation would have taken place much earlier and the large mass of putrescible material in the interior of the aneurismal sac would undoubtedly have undergone putrefaction and given rise to severe disturbance, constitutional and local.

DR. CAYLEY observed that the case was a very instructive one. He had not met with many aneurisms in Bengal. Quite recently he had seen a very interesting case which he would relate. It was that of a male child, 10 years of age, who had sustained an accident four weeks before admission into the Mayo Hospital. There was a fluctuating swelling above and below the knee ; an opening existed out of which clot protruded. The contents of the sac were putrid, and there was emphysematous crackling around the swelling. The cavity was laid open and cleared out. Blood welled into it, and amputation was at once performed. The boy was doing well. He was labouring under septicæmia with a temperature of 105° when placed on the table.

The lower end of the femur had been splintered, and corresponding to its lower third there was a false aneurism. The main artery was not torn ; the blood appeared to come from the bone.



BABOO JOGENDRA NATH GHOSE saw a popliteal aneurism cured by digital pressure in the College Hospital, also an aneurism of the femoral cured by ligature of the external iliac.

BABOO BEHARY LALL CHUCKERBUTTY related a case of aneurism of the peroneal artery which was opened by mistake. The tibial, popliteal and femoral arteries were tied in succession, but hæmorrhage still continuing, the leg was amputated at the thigh. The patient recovered, but died of cholera a fortnight after his discharge from hospital.

BABOO ANADA CHURN KASTAGIR had recently had a traumatic aneurism under his care in an old man on whose leg a block of wood had fallen. There was a large fluctuating swelling from the middle of the thigh to the middle of the calf. It was opened and some clots were removed. It was dressed daily for 7 days, at the end of which time the old man fell down suddenly and died. It turned out to be a large aneurism of the popliteal, and the immediate cause of death was a fresh extravasation.

BABOO LALL MADHUB MOOKERJEE saw a popliteal aneurism successfully treated by Dr. Fayer in 1865 by digital pressure.

BABOO OMRITO LALL MOZUMDAR mentioned that a large aneurism of the femoral had recently been successfully treated by Dr. Cayley by ligature of the external iliac. A catgut ligature was used which was absorbed, the wound healing by the first intention under dry dressing. The aneurism disappeared in six weeks.

BABOO CHUNDER MOHUN GHOSE had dissected a body in which an aneurism of the inferior mesenteric had burst, causing fatal hæmorrhage into the peritoneum.

BABOO BIPIN KRISTO KUMAR had seen DR. LAURIE tie the left common carotid successfully for a cirroid aneurism of the left ear.

BABOO KANNY LOLL DEY related a case in which death had been caused by an aneurism of the descending aorta bursting into the pleura.

DR. MCLEOD also exhibited an ENCHONDROMATOUS TUMOUR which he had removed from the left submaxillary

region. Patient was a Hindu, æt. 40, and had noticed the swelling 3 months before admission. It had grown as large as an average fist, and occupied the whole of the left submaxillary triangle. The tumour evidently involved the submaxillary gland. It was hard, and the induration was felt in the floor of the mouth ; the left sublingual gland being also harder and larger than usual. The skin and superficial fascia were freely moveable over it, and though its deep mobility was less satisfactory, it was found to be separate from the jaw. A T-shaped incision was made over it, the horizontal limb being parallel to the lower border of the lower jaw from the symphysis to the anterior border of the sterno-mastoid muscle. The facial artery was seen and tied before division and the surface of the tumour exposed. The anterior belly of the digastric was pulled forward, and the mylo-hyoid divided close to the jaw. The mass was found to extend deeply under the vessels and nerves, and catgut ligatures were placed on its deep connections before they were divided ; bleeding was thus prevented ; the mucous membrane of the floor of the mouth was finally divided, and both submaxillary and sublingual glands and their ducts completely removed. The wound was washed with chloride of zinc lotion, and the edges of the incision brought together ; the catgut ligatures being used as drains. The incision healed by the first intention, the wound cavity gradually filled up, and the patient was discharged from hospital perfectly well 30 days after the operation. The salivary glands were curiously subject to become the seat of cartilaginous tumours, and this was a good illustration of a growth of this kind affecting the submaxillary gland. Similar parotid tumours were more common.

BABOO OMRITO LALL MOOKERJEE next exhibited a preparation of NECROSIS OF THE CRICOID CARTILAGE from a patient, a Hindu æt. 32, who was admitted into the Mayo Hospital on the 3rd of July, suffering from very urgent dyspnœa. He was unable to speak, and pointed to his throat as the seat of his malady. He had been suffering from dyspnœa for 15 days, and before this had had fever. The patient was moribund, and died three hours after admission. The cricoid cartilage was surrounded by an abscess and in a

state of necrosis. The lungs were in a state of hepatization—a condition which had been indicated by the usual physical signs during life.

DR. MCLEOD had met with a case of necrosis of the left ala of the thyroid cartilage in a case of chronic laryngitis in which laryngo-tracheotomy had been performed. The necrosed fragment occupied a gangrenous abscess cavity which communicated with the cavity of the larynx. The patient died of lung disease after a lingering illness.

BABOO LALL MADHUB MOOKERJEE introduced a patient who had been resuscitated by Howard's direct method after having ceased to breathe while under chloroform. He was a weakly old man, and was being chloroformed for extraction of cataract by Dr. Cayley. Symptoms of asphyxia set in, and artificial respiration had to be carried on for at least four minutes before signs of revival appeared. The calcified cartilages of the 9th and 10th ribs cracked under the first pressure, but the artificial breathing was persevered with. The operation was ultimately performed and proved successful.

DR. MCLEOD said that a few days ago a very similar incident had occurred to him. An old man was brought to hospital with a prolapsus of the rectum nearly as large as his head. Vain efforts had been made to reduce the mass. He was put deeply under the influence of chloroform, and just as the reduction of the intestine was being completed he ceased to breathe. The pulse was still beating. The tongue was at once pulled forward without avail, and not until Howard's method had been employed for some minutes by MR. WALLACE was breathing re-established.

DR. CAYLEY was convinced of the great value of Howard's direct method and of its superiority to other systems of artificial respiration. He had employed it successfully in several cases of suspended animation from chloroform and other causes, and in every case in which he had tried it, it had succeeded. It must however be practised thoroughly as described by Howard; shoulders raised by pillows, head falling back and arms hanging on each side of it. Otherwise the thorax was imperfectly filled. He did not

believe in the use of pulling the tongue forwards, and Howard's experiments went to prove that the expedient did not open the glottis.

BABOO JADUB KRISTO GHOSE showed a case of RECURRENT SCROTAL TUMOUR. The original tumour had been removed in the usual manner in December 1866. Four years afterwards swelling appeared in the pubic region without fever or pain. One year ago the left leg swelled. This has disappeared. The scrotal tumour is now growing rapidly. It is more marked on the left side, and has attained considerable dimensions.

Several members stated that they had seen similar cases, and in some instances the recurrent growth had been successfully removed in the same manner as the original tumour.

BABOO BEHARY LALL CHUCKERBUTTY brought a patient suffering from HERNIA OF THE LEFT LUNG consequent on injury. The patient, a Hindu male, æt. 22, had had the third left rib broken at its anterior extremity by coming against the shaft of a hackney carriage. His condition on admission into the Chandney Hospital was as follows:—

He was suffering from shock, and his pulse was beating very feebly: his breathing at the time was very much hurried and laborious. On examination it was found that he had sustained a fracture of the left third rib about its anterior third, from $2\frac{1}{2}$ inches from its junction with the sternum. There was a circumscribed swelling extending about 4 inches around the fractured spot. Emphysematous crackling was discovered in the outer area of this space with a small, soft, crepitant nodule about the size of a large nut, in its centre. This nodule disappeared on pressure and again came out on the slightest exertion of the patient to take breath, and also when the pressure of the finger was removed. On pressing the tip of the index finger over the protrusion I perceived a very distinct gap in the intercostal space between the 2nd and 3rd rib. The patient spat out about 3 drams of frothy blood by several efforts of coughing. The heart-sounds could not be distinctly made out, and were muffled by a sort of churring whizzing sound heard all over

the precordial area. Puerile respiration was heard over the right lung. Pulse was 100 and respiration 36 per minute. Decubitus on left side. The 3rd rib and the intercostal space above it had evidently given way to the direct violence received ; and the fractured ends of the rib made their way through the pleura into the superficial part of the lung-tissue. Hence the emphysema and the protrusion of the part of the lung underneath the muscles and the skin covering the part. A pad was placed over the ruptured intercostal space to keep the hernia back ; and a broad roller was applied to prevent the movement of the chest to a certain extent. The patient was kept on low diet.

Subsequent Progress.—The next morning his pulse was 84 and respirations 36 per minute. He was restless all the previous night : complained of pain in the injured side of chest and also of difficulty in coughing out the phlegm. For the next 3 or 4 days his respiration was hurried and laborious. His pulse was about 66 per minute during all these days. Heart-sounds became distinctly audible on the 4th day after his admission.

There was not the least rise of temperature throughout his stay in the Hospital. Expectoration of slightly blood-mixed sputum continued for 3 subsequent days. He was kept perfectly quiet in his bed for first ten days. No untoward symptoms appeared, and he made an excellent recovery, and was discharged from the Hospital after 16 days' residence.

The SECRETARY announced that he had received from Dr. Lovell, chief Medical Officer, Mauritius, a communication enclosing a very interesting report on an epidemic of "acute anæmic dropsy" which had prevailed in that colony during 1878-79. The disease was first observed by Dr. Clarenc in the district of Moka in November 1878, but there was reason to believe that some cases occurred previous to this which had not attracted special notice. A rapid increase of cases took place in Moka during the two succeeding months. An abatement took place in February, and the disease subsided in April. "In December the epidemic extended to the districts of Plaines Wilhems and Port Louis ; in January 1879, to Lavanne,

Pamplemousses, Flacq, Riviere du Rempart and Black River : and in February it appeared in the district of Grand Port." "The disease attained its acme in February 1879, and had become much less frequent and fatal by June, and soon after this it may be said practically to have died out." 729 deaths are reported to have been caused by the disease.

The *symptoms* of the disease are thus described. "Anasarca of the lower extremities often extending to the upper extremities and trunk—seldom to the face, and only in the worst cases complicated with ascites, hydropericardium and hydrothorax. The dropsy was preceded by diarrhoea or vomiting, or both, with deep-seated pains in the limbs, epigastrium or abdomen, and was accompanied with slight fever, and in most cases by a rubeolar skin eruption disappearing under pressure, sometimes ending in petechiæ or phlyctenæ and desquamation. The disease sudden in its commencement, followed a chronic course, often lasting from three to six weeks—the tendency to œdema of the feet persisting after the patient felt otherwise well."

"The patients, generally Indians, were very anæmic, the blood watery with marked diminution of the red blood cells and increase of leucocytes and granules." "The urine was seldom albuminous." Enlargement of the spleen was not found to be a feature of the disease.

The report contains a careful analysis of symptoms and post-mortem appearances, but the foregoing extracts give a good summary of the most prominent phenomena.

As regards the etiology of the disease, "it was almost entirely confined to the Indian population ; it affected that class whether residing in town or country, and all ages and both sexes suffered. It was observed however that the Calcutta Indians suffered more than the natives of Madras." "Europeans were entirely exempt from the malady." The general population suffered to some extent in the town of Port Louis. Women and children were less liable to be affected than men. Occupation did not appear to have any influence. The "Camps" inhabited by the Indians are overcrowded and dirty, but not more so during the epidemic than usual. The Indians in Mauritius are gregarious and exclusive, and this perhaps explains the greater prevalence of the disease among them.

The diet does not appear to have differed from that of other times. Males were about twice as liable as females; infants seldom suffered, children did, and in equal numbers as regards sex. The season was healthy and non-malarious, and the prevalence of the disease could not be connected with any special climatic condition. A strong opinion is recorded, supported by weighty arguments, that the disease was not caused by malaria.

“It was observed that when one member of a household took the disease, some of the others almost invariably became affected within a few days. In the same way, when it appeared in a camp, it rarely remained confined to the house in which it broke out, but subsequently spread more or less extensively throughout the neighbouring huts. In a few instances it was observed to break out in a locality shortly after the arrival of some person suffering from the disease. On the other hand the attendants on the sick in hospitals rarely contracted the disease.”

Opinions of medical men were divided regarding its contagiousness, the majority being opposed to this view.

The mortality was estimated at 2 or 3 per cent.

The reporter considers the malady to be “a disease *sui generis*,” not due to malaria and not identical with *beri-beri*.

DR. COATES remarked that he had read the report, and had arrived at the conclusion that the disease was the same as had prevailed in Calcutta and the suburbs during the past three years. He was of opinion that neither was identical with *beri-beri*—at any rate with what he had seen under that name in the Madras regiment at Cuttack.

THE PRESIDENT said that the thanks of the Society were due to Dr. Lovell for this interesting report, and that care would be taken that the proceedings of the Society, which contained references to the disease as observed in Calcutta, would be forwarded to him.

The following gentlemen have joined the Society.—

MR. J. R. WALLACE.

BABOO OMRITO KRISTO BOSE, L. M. S.

THE CALCUTTA MEDICAL SOCIETY.

The eighth meeting of this Society was held at the Medical College on Wednesday, 11th August, Dr. J. M. COATES presiding.

DR. MCLEOD showed a patient from whom he had removed a large BRONCHOCELE on the 22nd of July. The patient, a healthy adult male æt. 29, from Serajgunge in the Pubna district, was admitted in the 1st Surgeon's ward on the 19th of July. The tumour had been growing for the last 8 years. Growth had been very rapid during the last 5. Beyond pain, disfigurement, inconvenience and occasional attacks of fever, there was no other cause of suffering or complaint. Respiration and deglutition were not impeded in any way. The patient was anxious to have the mass removed.

The tumour was found to be a large and hard enlargement of the thyroid gland. It was about the size of a child's head, more prominent on the right than on the left side, the sterno-mastoid being stretched over it in the former position, and overhanging the upper border of the sternum. It reached up as far as the upper border of the thyroid cartilage. It was freely moveable beneath the skin and over the deep structure of the neck. Two smooth circular cicatrices, the result of cauterization, existed on its surface. It moved upwards with the larynx in the act of swallowing. Patient's general health good.

The tumour was removed by a long incision in the middle line. Its fibrous capsule was similarly divided and stripped off its surface right and left as far as possible. Some bleeding took place from large veins, coursing on the surface of the tumour at this stage. The deep attachments of the tumour were now as rapidly as possible tied with catgut ligatures in sections, a common aneurism needle being used to pass the threads. As each section was tied it was divided,

and the mass was thus removed with comparatively small loss of blood. The method pursued was that recommended by DR. P. H. WATSON, with the exception that the tumour was removed along with its special capsule instead of being enucleated out of the capsule. The operation was done antiseptically, and the uncut ends of the catgut ligatures were brought out at the lower end of the incision for the purpose of drainage. The cavity of the wound filled with blood clot. It remained sweet till the 25th, when fœtor was detected. It was syringed out with an Iodine lotion and dressed once a day. Suppuration took place and repair by granulation. Patient was able to swallow from the first, and had no serious constitutional disturbance. The wound is now open only at its lower part, and quite superficial. The tumour was examined by PROFESSOR MCCONNELL, whose description of it is as follows :—

“The tumour consists of an oval-shaped enlargement of the entire gland constituting a mass rather larger than one’s fist. It is surrounded by loose connective tissue containing several large arteries which required ligature in removal of the growth. Beneath this, is the true fibrous capsule proper of the gland, sending innumerable dissepiments into the interior so as to subdivide it into various sized lobules, and these in turn are made up of a multitude of small cysts some as large as a pea, the majority smaller, and a great many quite microscopical. These cysts are occupied by a gelatinous, rosy or pale-yellow material, and show under the microscope a delicate cyst wall of fine connective tissue lined by flattened nucleated epithelium, and filled by variously coloured mucoid or colloid secretion. The larger cysts seem to be formed by the coalescence of two or more of the smaller. Upon the dissepiments large-sized vessels with thin walls ramify, but do not penetrate the cyst-contents. Towards the centre of the growth the fibrous septa are at one spot very much thickened and hard from calcification. There is thus no abnormal growth but a exaggeration of the normal structure of the thyroid, and within it a more complex and abundant vascular development ; many of the septa are also infiltrated with mucoid material,

and no doubt to the softening thus produced, must be attributed the gradual development of the smaller into larger cysts, and the general very succulent and gelatinous consistency of the entire mass."

MR. WALLACE had seen a similar but larger tumour removed in London. The operation was performed on the same principles, following Greene and Watson.

The bleeding was very profuse. The basal ligatures were tied rapidly and the mass enucleated.

DR. BOWSER used to treat large numbers of goitre cases in the district of Rungpore, and found that the prolonged use of a weak ointment of Biniodide of mercury effected a cure in most cases. He had found the disease most prevalent in the neighbourhood of stagnant pools caused by the silting up of a river.

DR. COATES remarked that 90 to 100 cases of goitre resorted daily to the Chumparun dispensary when he was Civil Surgeon of that district. They were invariably treated with an ointment of Biniodide of mercury, (3ix. to lbs. iij. of lard.) His experience was that one-third recovered completely, in one-third the size of the tumour was reduced, and in one-third no change took place. He considered it of importance to expose the part to the full rays of the sun during and after the application of the ointment. Chumparun was a peculiarly goitrous district. Goats and sheep, dogs and horses suffered from the disease. His experience coincided with Dr. Bowser's that the disease was found along interrupted streams, and was less common or absent on the banks of running rivers. Cretins (*bods*) were frequently met with in goitrous villages.

The SECRETARY read a paper by Assistant Surgeon AVINAS CHANDRA BANERJEA on a case of HODGKINS' DISEASE or LYMPHADENOMA.

Elahi Bux, a Mahomedan male aged 30, a cooly, resident of Kansariparah (Calcutta), was admitted into the 2nd Physician's ward for a painful swelling in the abdomen and enlargement of the glands on both sides of the neck.

History.—The patient stated that for the last five months he had been suffering from a painful swelling in the

abdomen which gradually increased in size. It first commenced in the umbilical region, and is gradually increasing, and is invading the right lumbar region. For the last eighteen days his neck has become swollen on both sides after an attack of cold. Along with the painful swelling in the umbilical region he has noticed loss of appetite, indigestion and irregular state of the bowels. On enquiry the following particulars were made out. His parents and brothers were healthy. He is a man of intemperate habits. About four years ago he had an attack of gonorrhœa, but had no syphilis. Eight months ago he noticed increased secretion of tears from both the eyes, more especially at night, which, after continuing for a month, was followed by a pea-sized swelling in front of the right ear. Within a few days, this was succeeded by another of like nature behind the same ear, which two at last coalesced into one of double the size below the lobule of the ear. This gradually increased to about five times its original size, when it became inflamed. The inflammation subsided by the application of poultices and tincture of iodine within a fortnight. The present swelling of the neck on both sides has come on after an attack of cold eighteen days ago. The swelling is rapidly increasing in size. About six months ago he had fever and enlarged spleen.

Condition on admission.—Is anæmic and emaciated : countenance anxious. The glands behind the sterno-mastoid are swollen, hard and nodulated ; they extend from the lobule of the ears down to about the supra-clavicular region, giving to the neck an enlarged, thick and flattened (antero-posteriorly) appearance. These glands are not painful. The skin over these glands is neither adherent, discolored nor œdematous. The submaxillary glands on both sides are enlarged. There is marked venous bruit on the left side of the neck.

Abdomen.—There is a distinct bulging on the right side of the abdomen near the umbilicus ; on palpation there is felt a large nodulated ill-defined tumour occupying the right side of the umbilical and right hypochondriac and part of the lumbar region. The tumour appears to be immoveable from behind forwards, but it can be moved from side to side.

The tumour approaches to the parietes of the abdomen at its lower end : it is hard and resisting to the feel, and slightly painful on pressure. It extends below to the level of the anterior superior spinous process, and to the left about an inch beyond the median line. The tumour is felt to be distinct from the liver and spleen. The spleen is enlarged for about two inches below the left costal cartilage ; there is no enlargement of the liver. Complains of a constant pain of a lancinating character in the lumbar region. There was dulness over both the flanks. No œdema of the feet, legs or thighs : no pulsation of the tumour : no jaundice. No enlargement of the axillary and popliteal glands can be felt. The inguinal glands on both sides are enlarged.

Pulse moderately full, soft, regular at the right wrist, but very small, soft and weak at the left wrist. Brachial pulses on both sides are equal, showing that the left brachial was not compressed by any enlarged gland. No cough or difficulty in breathing : no pain in the chest : heart sounds weak. Temp. 98·4°. Urine contains no bile, sugar or albumen, but there is an excess of phosphates. Blood was examined by Dr. McConnell and found not to be leukæmic, but there was diminution of red corpuscles.

Subsequent progress and treatment.—The lumbar pain was the only complaint from which he used to suffer bitterly. This severe pain obliged him to keep to his bed ; made his nights restless, and prevented him from taking his nourishment well. Whatever nourishment he took used to disagree with him, producing flatulent distension of the abdomen. His bowels were irregular : stools whitish, soft and in lumps. The abdominal tumour began to increase in size with corresponding aggravation of the lumbar pain, and the tumour could be felt three inches to the left of the umbilicus about a week after admission. The swelling of the neck did not increase to any perceptible extent during his stay in hospital. The want of sufficient nourishment and sleep prostrated him soon, and he died exhausted thirteen days after admission.

The only relief which we could give him was by the subcutaneous injection of half a grain of morphia twice or

sometimes three times a day : conjee water enemata for the flatulent distension. A mixture of ointment of Belladonna and Iodine was used as a local application to the abdomen, and Syrup Ferr. Iodid. was given internally.

POST-MORTEM EXAMINATION.

External appearance, &c.—Post-mortem examination held about $8\frac{1}{2}$ hours after death. Body poorly nourished : rigor mortis slightly marked in the lower extremities, none in the upper. Pupils widely dilated.

Head.—Dura mater healthy. The vessels of the pia mater are very small. Brain substance is a little soft and cedematous, also anæmic on section ; each lateral ventricle contains a few drops of clear colorless serum. The central ganglia, medulla and cerebellum are all softened and anæmic. The vessels at the base of the brain are small and contain a very little thin dark, fluid blood. Weight 2 lbs. 6 ozs.

Thorax.—*Heart* : pericardium healthy ; its cavity contains about two ounces of yellow-colored serum. The heart is small, and feebly contracted. The right cavities contain chiefly fluid, dark blood ; the auricle in addition a small flattened fibrinous clot. A very small similar clot is found in the left auricle ; the left ventricle is empty. The valves and endocardium on the right side of the heart are also healthy ; on the left side the valves are also healthy, but the endocardium covering the papilla of the mitral valve with its chordæ tendinæ is thickened and opaque. The muscular tissue of the heart is pale and soft. Weight 5 ounces.

Lungs.—The left lung is free ; the right is united at the posterior part of its apex, and also along the outer margin of the superior lobe. Both organs on section, are throughout dark and congested, a little soft in consistency : nothing more remarkable. Weight of right $13\frac{1}{2}$ ozs. ; left $12\frac{1}{2}$ ozs.

Abdomen.—*Liver.* There is no recent peritonitis, but a large irregularly nodulated mass is found occupying the central portion and right half of the abdomen. This consists of the mesenteric and other abdominal glands greatly enlarged and matted together, surrounding a considerable portion of the small intestine, the coils of which are involved in the growth. The stomach, duodenum, liver, pancreas,

are all more or less fixed to the same. The post peritoneal glands are similarly involved, also those in the transverse fissure of the liver, the lumbar, and the pelvic glands; the mesenteric however are mostly involved. Some of these are as large as a hen's egg, and all on section, present the same appearance, are soft, brain-like and pale pink. The aorta and the venæ cavæ are embraced by the infiltrated and large glands around them.

There are 27 ounces of greenish yellow-colored serous fluid in the peritoneal cavity. Liver somewhat large but evidently undergoing contraction; capsule slightly thickened: surfaces rough on section, the liver substance has a reddish brown color; the inter-lobular tissue thickened, the lobules are prominent and mapped out (cirrhotic). No reaction with iodine. The group of glands at the transverse fissure forms an irregular mass, the largest individual gland of which is the size of a walnut: the appearance and consistency as above. They do not appear to have produced obstruction of the cystic duct, which is free. The *gall bladder* contains about an ounce of pale greenish-colored fluid, with a considerable greenish sediment of biliary-coloring matter. Weight 3 lbs. 14½ ozs.

Spleen—enlarged to about three times its normal size; capsule tense and stretched. The substance soft and dark, shows numerous small infiltrations of the same brain-like growth as affects the mesenteric and other glands; moreover at the hilus of this organ there is a chain of similarly enlarged glands. Weight 2 lbs. 3½ ozs.

Kidneys.—A little enlarged and apparently undergoing contraction. The capsules strip with difficulty, and the surfaces are here and there somewhat rough. On section, the pyramidal structure exhibits a dark, darky-pink color. The cortical structure is paler, fatty-looking, and incipiently reduced. No reaction is given with iodine. Weight of right 4½ ozs.; left 4¾ ozs.

Alimentary Canal.—Stomach of about normal size. Mucous membrane thick and corrugated, for the most part pale. There are several enlarged and infiltrated glands along the lesser curvature. The mucous membrane of the whole

of the small intestine shows a very remarkable appearance from its infiltration with small rounded nodules (about the size and consistency of boiled tapioca grains), and which present a similar appearance to the morbid growth in the other parts above described. In one or two situations also a large nodule has undergone secondary ulceration: this condition is also seen in the cœcum, while the ascending and transverse colons exhibit here and there small sloughy apparently dysenteric ulcers. The *mesenteric glands* above described form an irregular nodulated mass the size of a cocoanut. The stomach contains about 6 ounces of thick milky fluid. In the small intestine about half this quantity of brownish, fæculent fluid is found. The large gut contains about 4 ounces of semi-solid clay-colored fæcal matter. A solitary round worm is removed from the jejunum.

The lymph glands over the body generally are more or less involved, a large chain of these exists on either side of the neck, running from the base of the skull to beneath the clavicle, surrounding the carotid sheath and more or less adherent to the subcutaneous fascia, and even to the skin (in parts.) A group of these, almost as large as a man's fist, is dissected out for preservation. The glands in both groins are similarly affected, but do not form any large mass. The axillary glands are again also infiltrated, one or two as large as a pigeon's egg. None are found at the bends of the elbows or in the popliteal spaces. The structures of all these glandular tumours appears to be identical with that of the abdominal growth, which proves on microscopical examination to be lymphadenoma or lympho-sarcoma.

Preparations were exhibited of the cervical and mesenteric glands and the small intestine. The following points appeared to the author worthy of special remark:—

1. The commencement of the disease while the patient was apparently healthy. There was no hereditary taint: no syphilitic history.

2. The apparent causation of the swelling of the neck which the patient attributed to an attack of cold.

3. The early impairment of the function of digestion and assimilation, due to the state of the mesenteric glands and

intestinal gland tissue, made the duration of the disease shorter.

4. The presence of the tumour caused the erosion of the vertebræ.

5. Effusion of fluid in the peritoneal cavity was occasioned by pressure on the portal vein.

BABOO ANODA CHURN KASTAGIR read a paper on the RELATION BETWEEN FEVER AND CHOLERA, which will appear in next number.



THE CALCUTTA MEDICAL SOCIETY.

The following paper was read at the July meeting by Assistant-Surgeon A. C. KASTAGIR on the CONNECTION BETWEEN FEVER AND CHOLERA.

Whatever may be the essential nature of cholera, its resemblance to fever in the nature of its cause, and in certain other characteristics, can scarcely be denied. Here I shall try to bring together some points which I have observed in the course of my practice in Bengal.

(1). Soils which are favourable for fever, are also favourable to cholera. All the districts in Bengal, and I believe in other countries also, where fever breaks out once or twice in the year, are also favourable for the outbreak of cholera.

The disease is believed to be of modern origin, and *Jessore* is said to be its birth-place. But if Hindu medical works be consulted, it will be found to be at least as old as any other disease described in the same. *Bishoocheeká*, and *Jwar-autishár* are the names in which the disease is described in such works. Hence it is not of modern origin.

(2). The Hindu writers on medicine from the oldest time, seeing the intimate relation between fever and cholera, described the latter as a symptom of the former, hence the term *Jwar-autishár*, which literally means *fever with excessive purging*. A still more virulent phase of the disease, characterised by vomiting and purging of rice-water stools, followed by rapid collapse and death, is described as *Bishoocheeká*, which however means the last or deadly stage of any disease. It will thus appear, that the Hindus either identified the two diseases, or considered cholera as a serious complication of fever.

(3). In those places which are favourable for the outbreak of fever and cholera, it is observed that if fever breaks out severely in the beginning of the cold weather, cholera breaks

out later on towards the end of the season, or in the hot weather; in other words, the amount of solar heat necessary for development of cholera germs from the soil, is greater in degree than that required for development of ordinary fever-germs. The autumnal fever and hot weather cholera are generally witnessed throughout Bengal, though there are exceptions to this rule. Dr. Chevers says: "Cholera is most active in the North-Western Provinces from June to September,—the season during which it does the least mischief in Bengal proper." In this respect also it resembles fever.

(4). Periodical dampness of the soil is essential for cholera, as also for fever. When the disease is seen in a place which is dry all round the year, the special miasma is either blown to the place by the wind, or the attack is the result of deadly panic from fear of the disease, as will be shown hereafter.

(5). In certain places fever is endemic as in Jessore, Chittagong and Rungpoor. So is cholera endemic in certain localities—for instance in Calcutta—as will appear by reference to death reports—weekly and monthly. Dr. Chevers says: "Cholera as an endemic, kills its victims daily in Calcutta."

(6). Cholera and fever sometimes break out simultaneously in the same place. In the Chittagong station this may be observed almost every year during the cold and hot weather. In Maldah, while fever is raging in one part of the district, cholera is perhaps raging in another part, specially after an unusual inundation of the Ganges, where it passes through the district. Dr. Chevers observes, "At rare intervals a destructive epidemic (besides the endemic cholera) traverses Bengal, and visits the Up-country once in 3 years."

(7). I believe it has not escaped the observation of practitioners in Calcutta that certain fever-patients ultimately die with choleraic symptoms, while certain cholera cases recover by supervention of febrile symptoms before collapse has set in. These form the connecting link between cases of typical fever and typical cholera.

(8). All attacks of cholera which recover from the stage of collapse, are generally seen to suffer with symptoms of typhoid fever, when reaction takes place. This being the

case, and also considering that the febrile exacerbation which sometimes sets in before collapse, is still more distinct, the conclusion is natural that the vomiting and purging of the 1st stage of fever is one out of many widely different forms of irregularity with which fever is often seen to usher itself in this country, and that *collapse* in very severe cases is a new symptom which is either the direct result of rapid exhaustion from excessive drainage from the system, or of the toxic effect of the specific germ which was originally instrumental in causing the peculiar attack of the disease.

(9). Fevers which are neither symptomatic of surgical complaints, nor the effects of infection or contagion, vary widely in their mode of attack and symptoms from the simple intermittent and remittent fever, to the bilious, the gastric, the gastro-enteric, the relapsing, the yellow fever, the bygone sweating fever of England, the oriental plague of Constantinople and of Gour, and the *Jwar-autishâr* of the Hindus, &c., &c. This field of diversity in their attacks, severity of their nature, and symptoms is so extensive, that our cholera can most naturally have a place assigned to it among them ; and the variety in the nature of these diseases can only be explained by the most probable supposition that *malaria* itself is a compound substance containing perhaps as many species of organic germs as the vegetables to which it bears a very close analogy ; that these different germs develop or acquire activity under the varied influence of climate, season, degree of heat, moisture, and nature of the soil ; and that these entering our system, manifest their morbid effects by as widely varying symptoms.

(10). Outbreaks of cholera, and rarely of fever, in *Melâs*, or Fairs, require a few words of explanation. When these *Melâs* are held for days in a place devoid of houses and other comforts or necessities of life, a portion of the *Melâ ground* where the people sojourn must eventually be soaked with water used for bathing, cooking, or washing, &c., and other portions perhaps quite close by, with the night-soil, the urine, and other animal discharges. The mixed unhealthy emanations from these soils combined with the effect of bad quality of the eatables and drinkables, irregularity in eating,

indigestion, eating raw fruits, intemperance, want of sleep, fatigue, revelry, exposure to dampness, or night air,—all determine the alimentary canal to be the seat of the morbid manifestation in the shape of vomiting and purging.

The division of cholera into simple or bilious cholera, which is amenable to treatment, and into Asiatic, or blue cholera, which is invariably fatal, is good for purposes of treatment; but it no more helps in the solution of the difficulty of determining their cause, than the division of typhical cases of fever into intermittent and remittent fever, aids towards the same object. The outbreak of cholera in Chittagong after the great cyclone was owing to the scarcity of provisions, and salt water entering into the rice they took and the water they drank.

(11). Lastly, in the medical treatment of cholera, practitioners are not unaware how medicines such as astringents, opiates and stimulants are often quite powerless in stopping the rapid progress of the disease to collapse and death. In this respect, as far as my humble experience goes, if any medicine has any specific effect on the disease, it is *arsenic* and *cinchona* given in small and repeated doses (to prevent retching in an extremely irritable stomach). But these are precisely the universally admitted specifics for fever also. On this subject however I shall not dilate, for I believe every medical practitioner has his own favourite mode of dealing with the complaint, and by my advocating any particular mode of treatment, I may be giving occasion to an unpleasant controversy. Those however who adopt my mode of treatment, will admit that in this respect also the two diseases bear very close connection.

I shall now bring together one or two points in which the two diseases—*fever and cholera*—appear to differ widely, to consider whether they are of such a nature as cannot be reconciled, or do not admit of a rational explanation.

(1.) Many persons admit cholera to be infectious, or communicable from person to person; and since our fevers are not so, an unsurmountable difficulty apparently presents itself in bringing the two into close connection.

Dr. W. P. Dickson in his report on Epidemic Relapsing

Fever in the Rupa Jail, published in the *Indian Medical Gazette* of 1st June 1880, says that the disease was communicable from person to person. If this be really the fact, then one variety of our fever at least, *viz.*, the Relapsing Fever, is brought into close relation with cholera—taking the latter also to be communicable.

But these diseases which appear to spread from person to person by infection, may in reality do the same by epidemic influence. (a.)—Almost all the zymotic diseases were at one time thought to be contagious or infectious. But *Sir Thomas Watson*, in his recent work on “The abolition of Zymotic diseases,” published in 1879, curtails the number of really infectious or contagious diseases to ten (at page 4), *viz.*: (1) the *small-pox*, (2) the *chicken pox*, (3) *typhus fever*, (4) *typhoid or enteric fever*, (5) *scarlet fever*, (6) *measles*, (7) the *plague*, (8) *hooping cough*, (9) *hydrophobia*, and (10) *mumps*. He very properly excludes cholera from this list; for, according to him, the really contagious or infectious disease can be abolished from the face of the earth. He says: “They have now no other origin than contagion, that by enactment and rigid enforcement of judicious sanitary laws these terrible diseases, with their terrible consequences, may finally be banished from this Island (Great Britain)” &c.

(b.) Can the same be said of cholera? Certainly not. Dr. Chevers, who is, I believe, one of the greatest authority on Indian diseases, says that like fever, cholera has both its endemic prevalence and epidemic outbreaks.

(c.) The experiments which Doctors D. D. Cunningham and T. R. Lewis performed with the alvine discharges of cholera patients and healthy persons have definitely settled the question: the results of their experiments show that 44·7 per cent. suffered when infected with choleraic evacuations, and 26·9 per cent. suffered when infected with healthy or normal discharges. The difference between the two was only in the number affected by each. But we are pretty certain that discharges from the bowels of a healthy person are not infectious, therefore cholera discharges also are not infectious, hence the disease cholera like fever is also not infectious.

2. But it may be asked if cholera be not contagious or

infectious, how does it travel to very distant and healthy localities often against the direction of the prevailing winds? &c.

Such attacks admit of explanation more by the theory of panic than by contagion or infection.

Panic or fear of certain death from an attack of this deadly disease produces such a mental shock as to paralyze the ganglionic system of nerves distributed over the alimentary canal, producing the result similar to that which follows the division of mesenteric nerves. I shall illustrate what I mean, by quoting a few cases here:—

(a.) A compounder in the Baurisaul Hospital was so nervous, that he passed a liquid stool in his clothes almost every time I scolded him for any neglect of duty.

(b.) Offenders sentenced to corporal punishment often pass urine and fæces in their clothes before, or after the very first stripe inflicted on their backs.

(c). In the Chittagong harbour many of the crew of a certain vessel were attacked with cholera, some of whom died; the vessel was therefore moved down the river to a new anchorage, after which no fresh attacks occurred. Meanwhile another vessel came in and anchored at the first place, remained there for a month, loaded the vessel, and sailed out of the port without any case of cholera occurring on board. The first vessel which was moved down for cholera, was then brought back to its old mooring, as being the most convenient site for loading it; within 24 hours cholera again broke out on board of it. It was moved down a second time, and the disease again stopped; another vessel came and loaded at the first anchorage without any disease, and so on.

(d). In an outbreak of cholera in any particular locality, it is often observed that after the 1st case of recovery the virulence of the disease greatly abates, and new attacks are few, and generally mild in nature, while the disease may be raging most severely in the villages around. This can only be explained by the fact that the shock or depression of mind from fear of impending attack and death passes off with the happy news of a recovery, and hope of living again revives the sunken spirit, when the disease greatly loses its virulence.

(e). Strong-minded persons, and those who constantly attend cholera cases, are generally free from its dread. Hence Doctors and hospital attendants very rarely catch the disease. Mehters or sweepers in hospital, who constantly remove or wash cholera discharges, are the last to get the disease. I knew a sweeper in Chittagong who died at the age of 60 with cerebral fever. He served 40 years in the Chittagong Dispensary, fearlessly slept in the same room with cholera patients, and when any man died, himself used all the clothes ordered to be destroyed. This man, or his wife and children, never got cholera.

(f.) The so-called whimsical march of cholera contrary to the direction of the prevailing wind, its moving alternately backwards and forwards, or to all points of the compass, or fixing itself or sticking to a particular house or apartment, or clothes, or skipping over a number of villages and appearing in a new, or in a very healthy locality,—all these can only be explained by the theory of panic acting through the cerebro-nervous system.

(g.) Before leaving this subject, I shall quote a case in which the disease broke out after the receipt of a telegraphic message intimating the death of a near relative from cholera. The message was sent from Cox's Bazaar to Chittagong at a time when there was no cholera in the latter place. The recipient of the telegram, a Moonsiff's *Amlah*, within 10 minutes after passed one copious liquid stool; a second stool within 5 minutes after was followed by collapse; the man in that state was conveyed to his native village some 9 miles away, where he died. Other persons took the fright both in the deceased person's native village and also in the place where he got the attack first: some of whom died, and others carried the panic to their respective homes. Thus a tolerably severe outbreak was the result of a telegraphic message.

3. Before concluding this most interesting subject of the close connection between fever and cholera, I beg to allude to Surgeon-Major W. Curran's observation on the identity of the pathological conditions disclosed by post-mortem examination of those dying from cholera and from Peshawar



fever; *viz.*—"congestion of the brain and its membranes, or of the contents of the chest" (Vide *Indian Annals of Medical Science* for July 1876). Further on he remarks:—"There is the same pallor and lividity of the face, the same suppressed or whispering voice, the same tendency to collapse, and the same listless, sunken and desponding eye." In a foot-note to his report, Dr. Curran adds what a medical friend of his living at Dinapoor told him once, *viz.*:—"But I must tell you one thing, and it is my firm opinion that cholera and fever *are identical*, they are one and the same thing." Further on he says, "And I feel sure, if these cases (of cholera) occurred in Peshawar, they would have been called *Peshawar fever*, for the symptoms were exactly the same (page 274).

BABOO RAKHAL DAS GHOSE remarked that in all medical writings the term *Bishoocheeka* was applied to cholera and *Jwar-autishār* to dysentery with fever. Originally the first of these terms was applied to the last stage of all diseases. It is now confined to cholera. The fever which succeeds cholera is of a low and fatal type, and presents little resemblance to any type of febrile disease. After the Cyclone of 1874 cholera broke out on the Backergunge seaboard, but no fever prevailed while the disease was epidemic. This cholera appeared to depend on organic decomposition, bad food, and bad water. The subject of panic was a very interesting one, but it was difficult to say in the present state of our knowledge whether a case or outbreak was due to panic or poison. As regards the germ theory of cholera, he was of opinion that it had been disposed of by Drs. Cunningham and Lewis, who had proved that the so-called cholera germ was not peculiar to cholera, and that its appearance in the evacuations was rather a consequence than a cause.

DR. K. G. SIRCAR had never observed any similarity between cholera and fever. He had read several cases lately in the *Indian Medical Gazette* reported by Dr. Greene, which appeared to constitute a link between the two diseases. He denied that Drs. Cunningham and Lewis' researches had disproved the existence of cholera germs—though they

had explained the nature and source of certain living organisms seen in cholera evacuations. The germ theory as expounded by Dr. MacLagan appeared to him to explain the phenomena of cholera prevalence better than any other. This theory asserted that not only were germs necessary, but also a suitable nidus. Some persons, for reasons as yet unknown, afforded a nidus for the cholera germ, and when all the susceptible had been attacked the disease subsided.

In his treatment of cholera he relied greatly on arsenic given in frequent small doses in combination with dilute sulphuric acid and chloric ether if a stimulant was needed. He used the arsenic as a cardiac stimulant—following Balfour. The drug probably operated through the sympathetic system.

On the whole he was inclined to think that fever and cholera were different, and differently caused diseases.

At this stage the discussion was adjourned.

The ninth meeting was held at the Medical College on Wednesday, the 8th September, Dr. CAYLEY presiding.

The SECRETARY exhibited an intestinal concretion which had been forwarded by DR. J. GREENE, Civil Surgeon of Tipperah. The patient was a young woman 36 years of age. She had suffered from gastric pain for 14 years, and latterly the symptoms had become aggravated. They are described as severe pain in the stomach with incessant vomiting and tenderness on pressure in the epigastrium.

She was at first treated for nervous dyspepsia, then with opium internally and turpentine stupes externally, and then with purgatives which apparently caused the expulsion of the concretion.

BABOO ABINASH CHUNDER SEN was the medical practitioner in charge of the case. The woman was said to have been in the habit of "eating baked clay biscuits, a practice common among native women in those parts when pregnant."

A section of the concretion was made by PROFESSOR MCCONNELL, whose description of it is as follows:—

Intestinal Concretion Presented by Dr. Greene of Tipperah.

It is about the size of a walnut—rounded in outline, but

a little flattened at one part, where it seems as if it had been attached or had adhered for some time to the mucous membrane of the bowel. The inface has a greenish yellow color, and is rough. On a section being made the nucleus of the concretion is seen to be formed by a small betelnut (the pigmented vegetable structure of which is confirmed by microscopic examination). The crust is thick, very dense and hard, and appears to consist purely of phosphate and carbonate of lime.

Two other intestinal concretions were brought for exhibition from the Museum of which the following description has been recorded by DR. MCCONNELL in the Museum Catalogue :—

1658.

Half of an intestinal calculus or concretion extracted from the rectum of a native (male) adult, at Midnapore (on the 1st September 1873) by Dr. R. G. Mathew, Civil Surgeon.

“The patient came to the Midnapore Charitable Hospital complaining of pain along the course of the transverse colon, and obstruction of the bowels. He was treated with large enemata of turpentine and Ol. Ricini, and a strong purgative. Next day he returned to the hospital, having been copiously purged but still complaining of great uneasiness and pain at the anus accompanied by a feeling of weight. An examination was made by the finger, and this calculus was detected and removed by the forefinger and a scoop. The patient obtained immediate relief, and was discharged cured. No history could be obtained to throw light on the origin of the nidus.

The Report on a chemical examination of one-half of the calculus by Baboo Taraprosunno Roy is as follows :—It is composed of three concentric layers, all of which contain oxybate of lime. The middle layer is made up entirely of this substance. Both the outer and inner layers contain cystine in addition, the proportion of which is much greater in the inner than in the outer layer. No uric acid or phosphate can be detected in any of the layers.

The central portion or nucleus of the concretion has a dark reddish brown color, and is felt-like in appearance. It

appears to consist of vegetable fibre in a fine state of subdivision and coloring matter—fæculent or biliary.

2279.

An intestinal concretion removed by the finger from the rectum of a native boy (Choony Lall) about 10 years. Admitted for obstruction of the bowels of 10 days' duration.

The abdomen was greatly distended and painful. Warm emollient enemata brought away a small dry bit of fæcal matter on the first day; on the second day fragments of a curious looking reddish clay-like material was noticed in the evacuations.

An intestinal concretion was suspected, and on the finger being passed into the rectum, a hard solid mass was found lodged in the bowel, occupying the hollow of the sacrum. By a little manipulation it was removed entire, and is seen (*vide* specimen) to be the size of a small orange. It was found externally coated with soft yellow fæcal matter, which on being washed away revealed a hard greenish crust of biliary coloring matter: but the concretion itself is soft and friable, of a reddish clay colour, and on microscopical examination consists of vegetable matter almost exclusively. It is composed of the husks of some graminaceous plant, the longitudinal large cells of the testa are distinct, and the more oval shaped or hexagonal cells of the deeper coat filled with reddish brown coloring matter are also found.

The removal of this concretion was followed by complete relief of all the symptoms of obstruction, and the boy left the hospital on the 21st instant.

Presented by Dr. J. F. P. McConnell, 22nd October 1877.

BABOO BEHARI LALL CHUCKERBUTTY narrated a case in which sudden death had followed the extraction of a urethral calculus.

The following are the notes of the case :—

Oogra Chamar, aged 32 years, was admitted into the Chandney Hospital on the 12th August 1880, for retention of urine owing to a calculus obstructing the urethral canal. The retention took place some four days previous to his admission into the hospital. On two occasions the stone was pushed back into the bladder before it was relieved; and it

was expected that the stone would come out by the natural passage. I advised the patient to strain with a little force by catching hold of the end of the penis at the time of micturition. During his stay of four days in the hospital he made water himself on four or five occasions, and passed two small pieces of gravel on the 15th August 1880.

At 1 P. M. of the 16th the original calculus got impacted at the root of the penis in front of the scrotum, and the patient was in awful agony to get rid of it. I felt the stone with the finger and carried it out of the external urethral aperture by squeezing. When I extracted the stone his pulse was good and strong, but he was perspiring a good deal owing to the violent effort of straining he had made previous to my attendance. He had not had the least rise of temperature even for a single day during his stay in the hospital.

After the extraction of the stone I took him to be entirely out of danger, but within an hour he took a very bad turn. He passed some 8 healthy motions within three-quarters of the extraction of the calculus; and his pulse began failing persistently which no stimulants could recover. Some three hours after he was found to be drowsy, but could answer rationally to my questions: coma gradually increased, and he ultimately died at 5½ A. M. of the 17th August 1880. On passing the catheter after death only a few drops of urine came out with the catheter, and the bladder was found quite empty. No autopsy was allowed.

To account for so sudden a death I am of opinion that his kidneys were not in a healthy state; and the slight damage done to the urethra during the extraction of the calculus was quite enough to cause suppression of urine and his ultimate death from uræmia. unfortunately his urine was not examined by chemical tests.

The calculus weighs 13 grains only. Its length is nearly $\frac{3}{4}$ of an inch. Its circumference at the thickest part is a little more than one inch.

BABOO BEHARI LALL CHUCKERBUTTY in reply to questions added that no blood had escaped per urethram; there had been no rise of temperature; a rigor had occurred after

the extraction ; he had passed water at the same time that he had the 8 motions, but none after that for 18 hours.

DR. MCLEOD remarked that sudden death from shock had been known to follow simple passage of a catheter into the bladder ; the well known urethral fever was probably due to a minor degree of shock. It appeared to him that the fatal event in this case was due to shock.

BABOO LALL MADHUB MOOKERJEE agreed with Dr. McLeod. He had seen great prostration follow the passing of a catheter. The shock probably caused suppression and uræmia.

DR. CAYLEY thought that the absence of rise of temperature rendered uræmia improbable.

DR. MCLEOD read a paper on THE ANTISEPTIC REMOVAL OF SCROTAL TUMOURS.

There are several difficulties connected with the antiseptic removal and subsequent treatment of scrotal tumours. In the first place, it is difficult to purify the parts ; the surface is uneven, nodulated or tuberculated, hairy and studded with sebaceous follicles ; excoriations or even ulcers, sinuses and fistula often exist, and the preputial canal in large tumours with the penis imbedded is full of organic impurity. Secondly, the urethra and anus are in close proximity to the wound, and they emit periodically materials either already putrid or very prone to undergo putrefaction, and they must be left open. Thirdly, the wound is always an extensive and open one. Fourthly, it pours out a large quantity of discharge—lymph and blood—of a very putrescible character. Fifthly, the wound necessarily takes a long time to heal, and the period of its liability to putrefaction is a very prolonged one. Sixthly, the material by which repair is accomplished—granulation tissue—is of low organic status, and less competent to resist septic changes than tissues higher in the scale of organization, and lastly, the part of the body is one on which it is not easy to retain dressings closely applied to the surface. These difficulties appeared to me for some time to present insuperable obstacles to the successful adoption of the antiseptic system in its most perfect shape in such cases.

Besides, the death-rate in these operations has never been

very large, and under a modified antiseptic treatment the great majority of them made a satisfactory and tolerably comfortable recovery. Still, in all cases a good deal of inflammatory disturbance, ending in suppuration and accompanied with considerable constitutional disorder, took place; in all cases discharge was free, and however careful and frequent the dressing, much foetor disagreeable to the patient and dangerous to the ward occurred. In some cases sloughing took place locally, in others diffuse suppuration of a septic kind, accompanied with a low type of fever—septicæmia—crept up the cords or spread into the abdominal walls; occasionally diarrhœa or dysentery evidently of septic origin, reduced the patient or put his life in danger; in a few cases pyæmia was developed and carried him off; and not unfrequently visceral inflammations,—bronchitis, pneumonia, pleurisy or peritonitis,—all I suspect of septic causation, occurred. In all the operation of dressing was painful and disagreeable—painful on account of the inflammation, and disagreeable on account of the putrefaction. The possibility of obtaining better results under antiseptic management first presented itself to me in consequence of my succeeding in keeping aseptic two cases in which I operated for the purpose of freeing the penis, which, as a result of operation for removal of scrotal tumours, was bound down to the scrotal cicatrix by a firm cicatricial band, and obtaining repair by physiological process without inflammation, suppuration, putrefaction or constitutional disturbance. Might not the same result be obtained in operations for the removal of scrotal tumours with the same benefit? I have now performed eight operations of this kind with strict antiseptic precautions, and I have gained sufficient experience to enable me to conclude—1st, that it is possible and easy with a little care to perform these operations and treat them to the end antiseptically, and 2nd, that when this is done, several material advantages result.

You are all familiar with the operation as performed in the Medical College Hospital. The principal objects held in view are—(1) to remove every particle of diseased tissue, (2) to leave no tissue in which experience has taught us that the

disease is apt to reappear, for example the preputial mucous membrane and apparently healthy skin at the sides of the tumour, (3) to preserve the penis and testes, and (4) to lose as little blood as possible. This last most important object is now very thoroughly attained by the use of India rubber bandages to empty the tumour and an India rubber cord to keep it empty. The belt devised by Professor Partridge keeps this cord in excellent position and efficient until the principal vessels have been secured. This adaptation of Esmarch's contrivance has undoubtedly robbed the operation of all its terrors, and I believe has very materially reduced its mortality. Professor Partridge removed in December last a scrotal tumour which weighed after removal 111 lbs., and in January of this year I amputated a similar mass weighing 96 lbs., and in neither case did the hæmorrhage amount to more than an ounce or two—less I suspect than had been driven out of the tumour by the elastic bandage. I find that in the five years 1865-69, 133 scrotal tumours were removed, and that of these cases, 31 died or 23·3 per cent. In the five years 1875-79 there were 225 operations with 22 deaths, or 14·2 per cent. This saving of 8 lives in every hundred operated on may, I think, fairly be attributed chiefly to the improved measures for restraining hæmorrhage, perhaps also in some measure to the use of antiseptic agents, carbolic and boracic acids, locally applied. I believe that under the strict antiseptic method a still greater saving of life and a very palpable saving of suffering and discomfort may be accomplished. The only change which I have introduced in operating, and it is one which the strict antiseptic method has rendered possible, is the use of catgut stitches for the purpose of fastening the testes together and placing and retaining them in proper position. I also dissect back the lateral flaps somewhat so as to construct pockets for the testes and stitch the flaps so made to the sides of the testes. The stitches are passed not through the testes themselves but through the collar of tunica vaginalis which is left around them. Under the antiseptic system these catgut threads give rise to no irritation, and in about a week they are disintegrated and absorbed by the living tissue—by infil-

tration with leucocytes and molecular dissolution it is said, and the ends fall out and come away with the discharges. The first step of the antiseptic operation is to purify the surface of the tumour and the adjacent skin thoroughly. This is done with a 1 in a 20 Carbolic lotion. The operation is conducted throughout under the spray, and dressings are applied with three objects—(1) to keep a non-irritating antiseptic constantly in contact with the raw or granulating surface. This is accomplished by means of boracic acid ointment spread on thin muslin; (2) to arrange the dressings so that the discharges have a considerable distance to travel before they reach the unpurified air, and (3) to surround the wound in every direction with an atmosphere of Carbolic acid. This is managed as I shall now show you. The dressings are changed daily for the first three or four weeks on account of the abundant discharge, and then every 2nd or 3rd day according to the amount of staining observed.

[A case which had been operated on on the 6th of August, was exhibited. The dressings, which had been on for 36 hours, were removed and fresh dressings applied under the spray. There was very little staining and no foetor. The discharge was lymphic, surface granulating, edges of wound cicatrizing and rapidly advancing over the granulating surface.]

The two materials used in dressing are, you observe, boracic acid and carbolic acid gauze. The former is brought into immediate contact with the surface by being spread on thin muslin which adapts itself to all inequalities; the latter is so disposed as to guard the wound in every direction, special care being taken to place a large mass between the wound and the anus.

I have now performed 8 operations on this system. Of these 4 have been kept aseptic throughout. In the others putrefaction gained access to the wound from some cause or other within the first week. The critical time had been passed however, and they have done well. In two cases we succeeded in restoring sweetness after it had been lost by application of a strong solution of iodine. In none of the aseptic cases have we seen a trace of inflammatory disturbance or a drop of pus.

The failure in the first two cases was probably due to the use of a tape fastened round the thigh, as suggested by Dr. Partridge, for the purpose of keeping back the lateral flaps which were stitched to it. This tape got soaked and foul and conducted contamination to the wound. The system of stitching the flap to the surface of the testes which I have introduced enables us to dispense with this tape. Repair in these cases consists of four successive processes—

- (1) Effusion of lymph and blood. This surrounds and infiltrates the testes and cords. When the latter are diseased or voluminous, the mass of exudation is very large. Sometimes superficial sloughing of the infiltrated material takes place. Under antiseptic treatment this is strictly limited, and no tendency to spread is observed. The stitching of the testes reduces the amount of effusion very materially, and these organs are not floated off the wound by it as under the old system.
- (2) The second step is vascularization and organization of the effusion. Granulation tissue is formed, and this becomes permeated by blood vessels and gradually undergoes a higher development. A thick coating of lymph and blood forms on the surface, and this is gradually removed and a vascular surface is then disclosed. This happens within the first ten days. Formerly inflammatory disturbance and profuse septic suppuration occurred at this time, giving rise to breaking down of the separative materials, great constitutional disturbance and frequently to diffuse cellulitis of the neighbourhood running up the cords and along the abdominal walls, extreme depression from septicæmia accompanying.
- (3) The third stage is granulation and absorption. The surface becomes quite clean and granular, the mass of granulation tissue undergoes diminution in bulk, and the edge of the wound begins to cicatrize.
- (4) the last step is cicatrization also accompanied by absorption and contraction. The skin is drawn from every side, advances over the granulating surface, and finally only a small cicatrix round and under the root of the penis remains, which stiff and thick at first in time becomes thin and pliable. All this necessarily occupies time, and in the absence of covering flaps I don't anticipate very rapid recovery, but I am convinced by observation of

the cases which have succeeded, that the period of repair will be very materially abbreviated. On this point I shall make a future communication.

These wounds resulting from removal of scrotal tumours are very specially liable to septic disease. From their situation and size, the abundance of the discharge, and the low organization of the granulation tissue by which repair is accomplished, putrefaction and septic suppuration are inevitably set up, unless precautions are taken to prevent them.

You all, I dare say, can recollect the foul smell which the cases exhaled at every change of dressing—how painful and loathsome the process, the frequency with which sloughing and gangrenous cellulitis took place, and how certain if any erysipelas existed in the wards such cases were to contract it. You can therefore understand the advantage and comfort of absence of all inflammation, suppuration and foetor, and the luxury of having only a little flocculent and perfectly sweet lymph to remove from the surface and neighbourhood at each change of dressings. The liability of these cases to septic disease is well illustrated by the returns which I have already quoted. Of the 56 deaths which took place among these 332 cases, 11 was caused by erysipelas and 4 by septicæmia or pyæmia. Of the 16 deaths from asthenia, shock and exhaustion, no doubt many were due to blood poisoning; and I suspect that the fever, peritonitis, pelvic cellulitis, gangrene, embolism and uræmia to which 6 other deaths were due, were of septic origin, and perhaps also the 7 deaths from tetanus, the 3 from bowel complaint, and the 4 from pneumonia and dysentery. Dr. Fayrer in his "Clinical and pathological observations," gives particulars of 193 cases with 35 deaths, or 18·2 per cent—11 of these 35 were due to pyæmia. Last year erysipelas lingered in the Second Surgeon's wards, of which I was in charge for 9 months. Of 10 cases which occurred 5 were patients from whom scrotal and labial tumours had been removed. 28 operations for scrotal tumour were performed with 5 deaths, or 17·8 per cent. This year up to the present time under stricter antiseptic management we have had in the 1st Surgeon's

wards 15 such operations with one death. If so many fatal results took place from septic poisoning under the old system, who can reckon the misery produced in many cases by septic poisoning short of death—erysipelas, inflammation, diffuse cellulitis, fever, irritative, typhoid and hectic, asthenia tending to collapse and a painful and tedious convalescence. I believe that by the employment of the strict antiseptic system nearly all this suffering and death can be abolished.

To sum up, the advantages which appear to me to result from the antiseptic treatment of these cases are these :—

1st. By stitching the testes in place they are prevented, however long the cords, from being floated downwards or forwards by the profuse discharges. Less lymph suffices for repair, and the process of convalescence is thus materially shortened, and final recovery accelerated.

2nd. The process of inflammation is entirely prevented. Repair takes place by physiological process without intervention of any pathological phenomenon.

3rd. No constitutional disturbance takes place except the primary or reactive fever which ensues within the first 48 hours, and this is very mild.

4th. The risk of septic infection is entirely removed.

5th. The process of dressing is painless owing to absence of inflammation.

6th. The patient is not a source of offence to himself or danger to his fellows, putrefaction being entirely averted.

7th. Cicatrization is materially accelerated.

As far as I can judge the period of recovery will be about 2 months. Dr. Fayrer in his Clinical and Pathological Observations gives the duration of convalescence in 57 cases, and I find it amount on the average to 115 days or nearly 4 months.

8th. The penis can be more easily and efficiently kept free.

9th. Much suffering and discomfort are avoided, and

10th. The risk of death is very markedly diminished.

MR. WALLACE remarked that the progress of the cases treated antiseptically by Dr. McLeod, as observed by himself in the wards of the Medical College Hospital, appeared

ed to him fully to justify the favourable opinions and anticipations which had been formed regarding them by the author of the paper just read. The system of dressing was however expensive and complicated, and hardly suited to the circumstances of private practice or district dispensaries. The late Surgeon-Major Gayer had obtained excellent results by a simpler plan of dressing, particulars of which he would take the liberty of reading from a memorandum which he had prepared before coming to the meeting.

During the late Dr. Gayer's connexion with the Medical College Hospital for a period of 2 years and 7 months in 1876-77 and 78, he performed 74 scrotal tumour operations and had 5 deaths—2 from septicæmia, one from tetanus, one from pneumonia, and one from exhaustion, giving a death-rate of 1 in every 14·8 cases. Three of these deaths may be excluded as occurring in cases primarily unfit for operation. The first was an old, unhealthy and weakly man nearly sixty years of age, in whom the disease was complicated with epithelioma of the preputial tissues. This case died of septicæmia. The next was a case in which the testis and tunica vaginalis of one side were found extensively disorganised by old-standing hæmatocele which necessitated castration: this case died of tetanus. The third case died from exhaustion 36 hours after operation. The patient had a small tumour weighing only a few ounces, but he never rallied after the operation, in fact he really died from the continued effects of the shock of the operation merging into fatal collapse. Such a case would in all probability have succumbed from an operation far less formidable than the removal of a small elephantoid growth from the scrotum, such was seemingly the peculiar nervous irritability of his constitution. Deducting then these three deaths, occurring in cases in which the error lay in the selection of them or rather in their non-exclusion from surgical interference, we have only 2 deaths in 71 cases, or 1 in every 35·5, and only one of these from septicæmia. This statement will show the unprecedented success of scrotal tumour operations in Dr. Gayer's practice,—a success which will be all the more apparent when it is remembered that no less than five of the successful

cases were complicated with inguinal herniæ, all of which were subjected to Wood's operation,—two with temporary and three with permanent relief. In one of these cases there was a large omental hernia incapable of reduction, in which the omental mass was ligatured and amputated, and this case too went on to a favourable termination. Dr. Gayer's plan of dressing his cases after operation consisted in free douching of the parts with carbolised lotion (1 to 100), and his arrangement for carrying this out was simple, cleanly and effective. The bed and mattress on which the patient was laid had a hole through them about an inch and a half in diameter just where the pelvis lodged on the bed, and the Mackintosh which served to protect the bed-clothes from moisture, was similarly perforated. While dressing the patient, his loins were raised by means of a pillow over which the Mackintosh extended, and thus the discharges and the lotion used in cleansing them gravitated to the opening in the bed without wetting the patient's bed-clothes, and passed into a bowl beneath the bed placed there to receive them. The dressing consisted of small strips of lint spread with Boracic ointment (a preparation of Boracic acid one part, almond oil one part, white wax one part, and Paraffin two parts) and one larger piece of the same to envelope everything. Over this a thin layer of cotton was placed, and the whole kept in position by a T bandage. The average weight of the tumours removed was about six pounds, and the average stay of each patient in hospital after removal of the growth was 93 days. I believe the success in Dr. Gayer's cases was due mainly to the strict cleanliness obtained by free douching and to the antiseptic influence of Boracic acid. On the whole I think the practical bearing of Dr. Gayer's cases should tend to the adoption of a method at once simple and effective, and the materials for which are easily and cheaply procured.

DR. CAYLEY said that the points which struck him as most remarkable in the case shown to the meeting were the entire absence of any inflammatory disturbance, the less frequent change of dressings that seemed to be requisite, and the undoubtedly greater rapidity of healing. The difficulty in carrying out the system lay in the complicated

dressings required. He should, however, give the strict antiseptic plan a trial in the Mayo Hospital.

BABOO BEHARI LALL CHUCKERBUTTY observed that skin grafting would probably still further reduce the period of convalescence.



THE CALCUTTA MEDICAL SOCIETY.

The tenth meeting was held at the Medical College on Wednesday, the 6th October. DR. CAYLEY presiding.

DR. MCLEOD showed three SARCOMATOUS TUMOURS which he had recently removed from the back of a female. Patient had undergone an operation for the removal of a fibrous tumour on the 1st of February 1880 (*vide* page 28.) She was discharged from hospital on the 19th of March with the wound quite healed up and a linear cicatrix about 5 inches long over the dorsal spinous processes. She was re-admitted on the 18th of September. A painful swelling was noticed about the middle of the cicatrix 1½ months before admission: this developed into a tumour as large as a foetal head. The growth was attended with pain and occasional attacks of fever. On admission three distinct tumours were detected, the largest beneath and to the right of the cicatrix, the next in size below this, and the smallest above. These lumps gave an elastic sensation, were freely movable on the subjacent tissues; but the skin covering the largest was involved, presenting a tense smooth shining pink appearance. Patient's general health was good; there was no enlargement of the lymphatic glands in the axilla. An operation for the removal of the growths was performed on the 22nd of December. The whole of the old cicatrix was taken away, the three tumours, a wide margin of skin and a considerable amount of the adjacent and subjacent tissue. The fibres of the rhomboideus major were exposed by the dissection. The edges of the wound were approximated as much as possible by four button stitches. The operation was performed under strict antiseptic precautions. Patient suffered from shock after the operation, but there was no febrile reaction. The wound remained aseptic; the stitches were removed on the 6th day, and the chasm was now being rapidly filled up by granulations. The tumours

presented the usual appearance of sarcoma: they were quite separate and globular. The smallest was undergoing fatty degeneration in the centre. In the tumour of intermediate size central softening, due to fatty and mucoid degeneration, had progressed further, and in the largest there was a cystic cavity containing broken-down tissue enclosed in a sarcomatous rhind. The case was interesting as showing—

1st.—The rapidity with which recurrence takes place in cases of sarcoma.

2nd.—The great tendency of the tissue to undergo decay, and

3rd.—The manner in which return of the growth takes place by regional recurrence, or development from separate centres near the cicatrix, as distinguished from continuous recurrence in the cicatrix.

DR. MCLEOD also exhibited a **HÆMATOMA** or **VENOUS ANEURISM** which he had recently removed from the left axilla of a grown up male. The following notes of this remarkable case have been drawn up by Assistant-Surgeon **GOPAL CHUNDER CHATTERJEE, M.B.** :—

Saroda, a Hindoo male, aged 45, resident of Beerbhoom, was admitted into the First Surgeon's ward with a venous aneurism on 16th September 1880.

About two months before admission the patient noticed a small swelling (the size of an ordinary betel nut) in his left axilla; it was soft, painless and freely movable. This swelling began to increase, and within 15 days became as large as a hen's egg. After a few days he made a journey of 14 miles by a cart, and on his return home the tumour shifted down a little and enlarged. He then came under the treatment of Surgeon G. C. Roy, the Civil Surgeon of Beerbhoom, who explored the tumour and found on puncturing it some bloody discharge oozing out through the canula. The growth was very rapid for about a month before admission.

There is no history of any injury to the part.

Dr. Roy furnished the following notes of the case :—

“He presented himself about $1\frac{1}{2}$ months ago with a soft tumour filling up the axillary space. I at first thought it to be of a fatty nature: it shifted its place in the course of a night to the back. The axillary tumour got smaller in

size. This confirmed me in my diagnosis as a case of migratory fatty tumour. After two days the axillary tumour filled up again suddenly in the course of a night. The tumour had a soft fluctuating feel. I then thought it to be a hæmatoma. It got tense, painful, and exerted pressure upon the brachial plexus. Application of lead and opium lotion relieved the pain and the tumour hardened. It gradually got somewhat smaller in size, when again there was a sudden increase, and it doubled in size. Exploring with a needle brought only fluid blood. It has got hardened since, and is attended with some burning pain."

Condition on admission.—The patient is a well nourished, stout adult male. He has a large soft swelling in the left axilla. The tumour is as large as an ordinary cocoanut, occupying the whole of the axilla which bulges downwards, and the left infra-clavicular and mammary regions of the chest. Posteriorly it extends as far as the axillary border of the left scapula. It is bounded above by the clavicle and below by the 7th rib. Its longitudinal diameter 8 inches and the transverse is about a foot. The whole tumour is uniformly rounded, with a broad base: it is fixed to the chest wall. The surface of the tumour is smooth, the covering integument healthy, and freely movable. Consistency of the tumour soft and fluctuating. There is no throbbing pain; no surface oedema; no increase of temperature, and no pulsation. On auscultation no bruit can be detected. There is slight deficiency of sensation in the upper and outer half of the left arm: no oedema of the left upper limb; no change in the axillary or brachial pulse.

The tumour was explored by a fine trocar and canula, through which a free flow of dark venous blood took place; the swelling was diagnosed to be a tumour containing blood. Its removal by operation was considered justifiable.

An operation was performed under chloroform and strict antiseptic precautions on the 19th September 1880. The axillary artery was controlled by a new method. Wood's hernia needle was pushed in from the inner border of the left coracoid process beneath the axillary vessels and brachial plexus and then taken out below the clavicle about $1\frac{1}{2}$ inches from its

sternal extremity. Six catgut threads forming a loop at one end were then made to traverse the track of the needle ; their ends were then passed through the loop and tightened, a pad of carbolic gauze being placed between the threads and the skin to prevent pinching of the latter , thus pressure was applied to the axillary vessels and the circulation of the limb obliterated. This was proved by disappearance and reappearance of the radial pulse as the loop was tightened and relaxed. Esmarch's cord was then tied round the upper third of the arm to prevent venous regurgitation.

The circulation having been thus obliterated, the tumour was exposed by a T-shaped incision ; the horizontal limb being parallel to the lower border of the pectoralis major and the vertical at right angles to it from its middle to the inferior angle of the scapula. The tumour was easily exposed. It was found to present a bluish tint and to be readily separable from the surrounding tissues. It was rapidly enucleated ; but its wall being weaker posteriorly it gave way, and a great gush of venous blood took place. Its deep attachments were now rapidly sought, tied by catgut threads and divided. The principal of these attachments was found at the apex of the axilla, and on its division it was found that the axillary vein had undergone division. The distal orifice of this vessel, which emitted a little blood, was tied with catgut, as also the subscapular vein. The tumour was now removed. It was found to extend as far back as the vertebral border of the scapula between the subscapularis and serratus magnus muscles. Its removal had necessitated a complete dissection of the axilla. A few arteries was tied and the wound carefully stitched with iron wire and horse-hair sutures. The catgut loop which commanded the axillary vessels was gradually relaxed : no bleeding took place. It was felt from the inside, loosened with the finger and left in place in case of secondary hæmorrhage. The ligatures which had been left long were used as drains and two drainage tubes inserted in addition. The radial pulse was observed gradually to return, and became equal in volume and force to the other in course of the day. The wound was dressed antiseptically.

Progress.—The patient was under shock for some hours : his pulse was very weak after operation, and breathing hurried. There was no subsequent bleeding. He gradually rallied. Discharge emitted an unpleasant odour on the 3rd day owing to the sulphur in the drainage tube, and continued offensive for 4 or 5 days, but the wound behaved as an aseptic wound. There was no œdema of the forearm, and no loss of temperature or sloughing.

The wound united almost throughout by first intention : the catgut drains were absorbed in 9 days. Slight œdema of the arm was subsequently noticed : this disappeared in 4 days. There is now no fœtor in the discharge ; there are four small superficial sores ; the axilla has collapsed and got filled up with granulation tissue. There is no puffiness about the wound, the flaps are soundly united. The general health of the patient is satisfactory. The six threads of catgut ligature which were used to control the axillary vessels were withdrawn on the 4th day. A little suppuration took place in their track where they had pinched the skin, but none deeply. These orifices are in process of rapid repair.

The following description of the tumour by PROFESSOR MACCONNELL has been extracted from the Museum catalogue :—

VENOUS ANEURISMAL SAC REMOVED FROM A HINDOO

MALE SARODA, AGED 35.

Description of the venous cyst.—“This sac or cyst is about the size of the fœtal head. A small portion of it was cut away during the operation (the rent has now been stitched), and at one part is a rounded opening capable of admitting the little finger, which is the orifice of communication of the sac with the axillary vein ; the latter was tied above and below this spot on the separation of the tumour. The cyst contained only fluid blood, no coagula. On examining the interior there is found a layer of reddish grumous soft material two to three lines in thickness unequally distributed over the cyst wall ; this material is easily scraped away, and consists of blood coagulum showing no lamination or decolorization, and

presenting under the microscope only altered blood corpuscles (broken up and shrivelled) with much dark amorphous pigment matter and some hæmatoidin crystals. When this material is scraped away the inner surface of the sac or cyst is seen to be smooth and shining, *i. e.* has a distinct lining membrane; the flattened, tessellated and nucleated epithelial cells composing which can quite readily be recognized under the microscope. The rest of the cyst wall consists of well-formed fibro-elastic tissue with also smooth muscular tissue, in fact seems quite identical with the ordinary structure of the walls of a vein, so that there can be no doubt that the sac was an aneurismal-like expansion from the axillary vein, and is not an adventitiously formed cyst. There are no dissepiments or indications of such in the interior of the sac."

Cysts of this kind, Dr. McLeod remarked, were exceedingly rare. He had searched a number of surgical works, and had only found allusion to them in Billroth's and Paget's works on Surgical Pathology. The tumour appeared to him to be a true venous aneurism. Dr. MacConnell's observations made this plain. It was quite certain that it had not formed in a pre-existing tumour either of a sarcomatous or angiomatous nature, and it was very unlikely, he thought, that the cyst had originally been of a serous nature and had contracted a communication with the axillary vein. The history did not throw much light on its origin, which was and must remain for the present a mystery. The expedient which had been adopted with such success for commanding the circulation was, he thought, worthy of the Society's special attention.

DR. RAYE had assisted in the removal of this remarkable growth, and had seen it before the operation. The diagnosis was very difficult. It was not easy to say from a physical examination of it whether the lump was a soft sarcoma or a true cyst containing blood. He had not felt quite comfortable regarding the looping of the axillary vessels and plexus in the manner which had been described. He was apprehensive of thrombosis, gangrene or paralysis, but none of these events had occurred. The plan was applicable, he thought, to amputation at the hip joint.

Dr. COATES had used a common screw tourniquet in operations in the axilla. The strap was passed across the patient's perinæum and pressure could thus be more directly applied to the subclavian artery than if it had been placed across the opposite axilla.

Dr. CAYLEY thought that the expedient described might be used for the cure of aneurism. It appeared to be preferable to Esmarch's bandage, which had been successfully used recently in many cases of aneurism, inasmuch as it did not subject the limb to such complete strangulation, but at the same time completely obliterated the circulation through the vessel feeding the aneurismal sac.

BABOO RAKHAL DAS GHOSE read a paper on THE BARK OF WRIGHTIA ANTIDYSENTERICA ; ITS COMPOSITION AND USES WITH SPECIAL REFERENCE TO ITS ALKALOID.

WRIGHTIA ANTIDYSENTERICA.

Nat. Order, Apocynaceæ.

Pentandria Monogynia (Linn.).

Nerium antidysentericum (Roxb.).

Holarrhena antidysenterica (Wall.).

Kutaj, *Kalinga*, (*Sans.*) *Kurchi* (*Beng.*).

Kaureya (*Hind.*) *Seeds Indrayav* (*Sans.*)*

Bot. Charac.—A shrub, leaves ovate oblong or exactly oblong, shortly acuminate, smooth, entire, green on each side. Corolla hypocrateriform, throat surmounted by ten scales, stamens projecting, inserted into the throat, anther 1, sagittate adhering by the middle to the stigma, ovaries 2 adhering, style filiform, follicles distinct or united, 5 to 10 scales at the base of the calix ; corymb terminal, few flowerets, corolla white, sweet scented, with a slender tube, limb spreading, flat with obovate segments. Flowers in March and April.

* The Sanskrit synonyms of *Wrightia antidysenterica* and its seeds (*Indrayav*) are numerous, and are not so generally used. Any one wishing to know them, may refer to *Amarkosh*, *Ratnamālā*, *Savdarat-nāvalī*, *Bhavaprokāś*, &c. But for the synonyms that are prevalent in different parts of India, Moodeen Sheriff's Supplement to the Pharmacopœia of India, 1869, p. 259, may be referred to with advantage.

The bark of the old wood scabrous, of the young pretty smooth and ash coloured.*

The seeds numerous, long, slender, intensely bitter.†

They yield a sort of medicinal oil.‡

Habitat.—The coast of Malabar, Concan, the Ghauts, Ceylon, Bourbon, and many parts of India.

Medicinal Parts :—The bark known as *Conessi* bark of the *Materia Medica* and *Cadaga-Pala* of *Hortus Malabari-cus*; and the seeds. The root-bark is preferred by Hindu Kavirajes.

Properties in reference to Hindu Materia Medica.—Acrid, bitter, stimulant, astringent, antidysenteric, stops hæmorrhages, removes affections of the skin and cures piles (*Rajanirghanta*.)

Absorbent and tonic increasing appetite and digestive power. (*Bhavaprokás*).

Expectorant, antidote to poisons, cures dysuria, urinary and skin diseases, checks nausea and vomiting, removes pruritus, improves the condition of bad ulcers, relieves pain of the stomach and checks the derangement of the three humours, viz. phlegm, air and bile. (*Susruta*.)

The seeds (*Indrayav*) are considered to possess *antiperiodic* and *anthelmintic* properties (*Bhavaprokás*) besides those that are mentioned above.

Preparations :—

1. The expressed juice of the bark either itself or with honey.
2. A fluid extract of the bark with ginger and *átis*.
3. A compound decoction of the bark known as *Kutajashtaka* or decoction of eight herbs is prepared as follows :—Take of *Conessi* bark, *átis*, root of *Stephania hernandifolia* (*patha*), flowers of *Woodfordia floribunda* (*Dhátaki*), bark of *Symplocos racemosa* (*Lodhra sans. Lodh*), root of *Pavonia odorata* (*Bálá*), the tubers of *Cyperus rotundus*

* For further botanical particulars vide Roxburgh's *Flora Indica*, Clarke's Edition, p 243. Sometimes *kuchla*—bark of *Strychnos Nux-Vomica*—is used as an adulterant for *kurchi* by the *baniahs* of the Calcutta market.

† The seeds of *Wrightia antidysenterica* should not be confounded with those of another variety *Wrightia tinctoria*, which are similar in appearance, but are entirely free from *bitterness*; vide Moodeen Sheriff's Supplement to the *Pharmacopœia* of India, 1869, p. 259. In the Calcutta bazaars the two varieties of *Indrayav* the *sweet* and the *bitter* are sold indiscriminately.

‡ Vide Babu Kanney Loll Dey's *Indigenous Drugs of India*, p. 124.

(*mustaka*), pomegranate fruit cortex, each a quarter tolá, water 32 tolás ; boil all together till reduced to one-fourth.

4. Panchamúlyádi or the decoction of five roots, &c. :—Take of *Hedysarum gangeticum* (*Salpani*), *Uria lagopodioides* (*prisniparni* sans. *Chakule* beng.), *Solanum indicum* (*Vrihati*), *Solanum Jacquini* (*Kantakari*), *Tribulus terrestris* (*gokshura*), *Sida cordifolia* (*Bala* sans.) *Egle Marmelos* (*bilva*), *Tinospora cordifolia* (*gulancha*), tubers of *Cyperus rotundus* (*mustaka*), ginger, root of *Stephania hernandifolia* (*patha*), chirátá, root of *Pavonia odorata* (*bala*), and bark and seeds of *Wrightia antidysenterica* equal parts ; in all two tolás, water 32 tolás, boil them together down to 8 tolás. Efficacious in all sorts of dysentery with or without fever, vomiting, tormina and tenesmus.

5. Kutajaputápáka or the roasting of *kutaja* bark :—Take of fresh, thick, healthy (not worm-eaten) *kutaj* bark, soon reduce it to a paste with the addition of rice water, wrap it well up in *jamba* leaves (*Eugenia Jambolana*), tie it firmly with *kusa* (*Poa cynosuroides*), cover it with a layer of clay about an inch in thickness, and allow it to be roasted in a cow-dung fire. When the clay assumes a brick-red color on the surface, remove the ball and allow it to cool, break open the contents of the ball and the expressed juice to be administered with honey in two tolá doses. Beneficial in all varieties of dysentery. Sá-rangadhar recommends the above process but makes use of thread instead of *kusa* (*Poa cynosuroides*).

6. Byoshádi chúrna or the compound powder of three acrids. Take of ginger, long pepper, black pepper, seeds of *Wrightia antidysenterica*, bark of *Melia azadirachta* (*Nimba*), chirátá, leaves of *Wedelia calendulacea* (*Markara* or *Bhringara* sans., *kasuria* beng.), root of *Plumbago Zeylanica* (*chitraka*, *chita*), root of *Picrorrhiza kurroa* (*rohini*, *katiki*), root of *Stephania hernandifolia* (*patha*), root-bark of *Berberis Asiatica* (*daruharidra atis*), equal parts of each ; powder and mix them together with powdered root-bark of *Wrightia antidysenterica* equal to the total quantity of the other ingredients.

Dose.—1 to 4 mashás in weight with honey or rice water. It is stomachic, and improves appetite, allays thirst, cures dysentery with or without fever.

7. Kutajadi :—Take of *indrayav*, rind of Pomegranate fruit, *Cyperus rotundus* (*mustaka*), flowers of *Woodfordia floribunda*, (*dhátaki*), fruit of *Egle Marmelos*, root of *Pavonia odorata* (*bátá*), bark of *Symplocos racemosa* (*lodhra*), red sandal wood, root of *Stephania hernandifolia* (*pathá*), each equal parts, in all two tolás ; water half a seer, boil them all together till reduced to two chataks, and lastly add half a tola of honey. It relieves tormina and tenesmus, checks hæmorrhages, gives consistence to liquid evacuations, and cures almost all varieties of dysentery.

8. Kutajadarim Kashaya or the decoction of *kutaj* bark and pomegranate fruit :—Take of rind of green pomegranate fruit and root-bark of *kutaj* each one tola, boil them together in half a seer of water till reduced to two chataks. Lastly add half a tola honey. The beneficial

effect of this preparation soon manifests itself even in obstinate cases of dysentery with blood and mucus.

9. Kutajaleha or the confection of *Conessi* bark :—Take of powdered Kutaja bark twelve seers and a half, water sixty-four seers, boil down to sixteen seers and strain. Boil again the strained fluid till reduced to the consistence of a liquid extract and add afterwards to it the following :—

Sonchal salt, native carbonate of potash (*yabakhara*), black salt (*bit*), rock salt (*sanidhar*), long pepper, flowers of *Woodfordia floribunda* (*dhataki*), seeds of *Wrightia antidysenterica* and cumin seeds sixteen tolas in all ; after mixing equal parts of each well powdered. Lastly rub the mixture thoroughly to make a confection.

Dose.—One tolá with honey. Efficacious both in acute and chronic varieties of dysentery with stools of different colors and accompanied by tenesmus.

10. Vriddhagangadhara Churna :—Take of tubers of *Cyperus rotundus* (*mustaka*), *Piper aurantiacum* (*renuka*), ginger, flowers of *Woodfordia floribunda* (*dhataki*), bark of *Symplocos racemosa* (*lodhra*), root of *Pavonia odorata* (*bála*), unripe fruit of *Ægle Marmelos*, gum of *Bombax Malabaricum* (*mocharasa*), root of *Stephania hernandifolia* (*pátha*), seeds and bark of *Wrightia antidysenterica*, cotyledons of mango and *atis*, *Mimosa pudica* plant (*lajjalu lata*), equal parts of each ; powder and mix them well. To be prescribed in combination with honey and rice-water. Efficacious even in worst cases of dysentery. *Dose*.—One másha.

11. Svalpagangádhara Churna contains all the above ingredients with the exception of *Piper aurantiacum* and bark of *Wrightia antidysenterica*. Rock salt only being added to it. Preparation and dose similar to the above.

12. Sunthádi Churna or the compound powder of ginger :—Take of ginger, *atis*, assafoetida, tubers of *Cyperus rotundus*, and bark of *Wrightia antidysenterica*, equal parts of each ; powder them well and mix them. Strain the mixture through calico. To be given with warm water in cases of dysentery.

13. Nagaradipachana or the compound decoction of ginger :—Take of ginger, kutaja bark, tubers of *Cyperus rotundus*, stem of *Tinospora cordifolia* (*gulancha*), *atis* equal parts of each ; in all two tolás, water thirty-two tolás, boiled down to one-fourth. Used in dysentery with fever.

14. Batsakádi Páchana :—Take of kutaja bark, *atis*, unripe fruit of *Ægle Marmelos*, tubers of *Cyperus rotundus*, and root of *Pavonia odorata* equal parts of each ; in all two tolás, water thirty-two tolás boiled down to one-fourth.

15. Mustakendrayava Pramathya :—Reduce to pulp the tubers of *Cyperus rotundus* and the seeds of *Wrightia antidysenterica* in a stone mortar with the addition of water. Take eight tolas of this pulp and

boil it in sixty-four tolas of water till reduced to sixteen. When cool administer it with honey.

16. Hriveradi Pachana :—Take of root of *Pavonia odorata* (*bala*), flowers of *Woodfordia floribunda* (*dhataki*), bark of *Symplocos racemosa* (*lodhra*), root of *Stephania hernandifolia* (*patha*), *Mimosa pudica* plant (*lajjalu*), bark of *Wrightia antidysenterica*, coriander, *atis*, tubers of *Cyperus rotundus*, *Tinospora cordifolia* (*gulancha*), fruit of *Ægle Marmelos* and ginger, equal parts of each ; in all two tolas, water thirty-two tolas ; boil down to one-fourth. Used in chronic cases of dysentery, loss of appetite, tormina and tenesmus.

17. In similar way, decoction of root of *Stephania hernandifolia*, seeds of *Wrightia antidysenterica*, *chirata*, tubers of *Cyperus rotundus*, *Oldenlandia herbacea* (*parpala khetpakra*), stem of *Tinospora cordifolia* (*gulancha*) and ginger can be prepared. Useful in cases of dysentery with fever.

18. In the same way too, ginger, *atis*, tubers of *Cyperus rotundus*, *chirata*, stem of *Tinospora cordifolia*, and bark of *Wrightia antidysenterica* can be used in cases of fever with dysentery in the form of decoction.

19. Kutajarishta or the vinous liquor of kutaja bark :—Take of root-bark of *Wrightia antidysenterica* twelve seers and a half, raisins six seers and a quarter, flowers of *Bassia latifolia* (*madhuka*, *maulphul*), bark of *Gmelina arborea* (*gambhari*), each eighty tolas and water two hundred and fifty-six seers, boil them all together till reduced to sixty-four seers and strain ; lastly add to the strained fluid flowers of *Woodfordia floribunda* (*dhataki*) two seers and a half and treacle twelve seers and a half. Mix them together and allow them to ferment for a month in covered earthen vessel. Afterwards strain the fluid, when it will be ready for use. It gives appetite, removes fevers, and checks dysentery both acute and chronic.

20. Pathadya Churna :—Take of root of *Stephania hernandifolia* (*patha*), unripe fruit of *Ægle Marmelos* (*bilva*), root of *Plumbago Zeylanica* (*chita*), long pepper, black pepper, ginger, bark of *Eugenia Jambolana*, rind of Pomegranate fruit, flowers of *Woodfordia floribunda* (*dhataki*), root of *Picrorrhiza kurroa* (*katuki*), *atis*, tubers of *Cyperus rotundus* (*mustaka*), wood of *Berberis Asiatica* (*daruharidra*), *chirata*, seeds of *Wrightia antidysenterica*, equal parts of each ; kutaja bark equal in weight to all the above ingredients ; powder them well and mix. Dose from twenty to forty grains with rice-water or honey.

21. Pradarari lauha :—Take of kutaja bark twelve seers and a half and prepare a fluid extract as in the preparation of kutajaleha described above. Then add the following substances in fine powder, viz. gum of *Bombax Malabaricum* (*mocharasa*). Indian madder, root of *Stephania hernandifolia*, *bela* fruit, tubers of *Cyperus rotundus*, flowers of *Woodfordia floribunda*, *atis*, prepared talc and iron, each eight tolas, mix them and make a confection. Dose about a drachm. Used in menorrhagia and different forms of leucorrhœa.

There are several other preparations more complicated in their composition and less frequently used by the modern kavirajes, than those that have already been noticed. Kutaja bark is not only used in dysentery, but also in cases of fevers as kutajárishta or kutaphaládi pachana which is prepared as follows :—

Take of bark of *Myrica sapida* (*kataphala*), seeds of *Wrightia antidysenterica*, root of *Stephania hernandifolia*, root of *Picrorrhiza kurroa* and tubers of *Cyperus rotundus*, equal parts of each, in all two tolás, water 32 tolás, boil down to one-fourth.

In gonorrhœa kutaja bark is employed with other demulcent medicines, such as Emblic myrobalan (*amla*), bark of *Terminalia Arguna* (*arjuna*), fruit of *Sapindus detergens* (*arishtaka* or *rita*) in the shape of decoction.

Kutaja bark and *indrayav* are the most useful medicinal agents in the Hindu Pharmacopœia; they are prescribed in various forms. Though most of the prescriptions are complicated, yet they will be found useful in those cases for which they are advocated. The complicacy in composition, I think, is the natural outcome of the defective chemical and physiological knowledge of individual drugs. When new light will be thrown upon their chemical constitution and physiological properties, short, simple and effective prescriptions can be formulated out of big, complicated ones. My efforts are so far successful that I am now able to lay before the members of the Society the results of chemical investigations regarding this important drug. Its analysis is not found in any of the recognized works on the indigenous drugs of India, such as Dr. W. B. O'Shaughnessy's 'Bengal Dispensatory and Pharmacopœia,' Dr. Waring's Indian Pharmacopœia and Bazar Medicines of India, Dr. Hanbury and Flückigen's 'Pharmacographia,' Roy Kanye Lal Dey Bahadoor's Indigenous Drugs of India, Moodeen Sheriff's 'Supplement to the Pharmacopœia of India,' &c. Being frustrated in my attempts to derive any knowledge as to the chemical analysis of so important a drug, I requested Baboo Ram Chundra Dutta, assistant to Dr. Warden, to analyse it and to determine its active principle; and I am now glad

to record that his efforts have been crowned with success. As we had no previous knowledge on the subject, the analysis of *kurchi* was carried on quite independently; and the *new alkaloid* that was isolated, was termed out of its own vernacular name—*Kurchicine*.

Since the publication of the preliminary report on the new active principle in the *Calcutta Medical News* for February of the current year, Dr. C. J. H. Warden found that Haines and Stenhouse in 1858 and 1865 examined the bark and seeds of the plant of *Wrightia antidysenterica*, and isolated a bitter principle which was called *Concessine* or *Wrightine*, and which appears to be the same as *Kurchicine*.* Although Messrs. Haines and Stenhouse were the original discoverers of the active principle of *kurchi*, yet its knowledge was entirely forgotten, and nobody even knew whether it had ever been analysed before. Had it been known to the profession, the slightest allusion to it would have been found in any of the works mentioned before.

Though Baboo Ram Chunder Dutt does not deserve the glory of discovering the *new alkaloid*, yet he deserves the credit of isolating it quite independently and bringing to light a treasure that was hidden so long within the old, dusty volumes of Mr. Leopold Gmelin. The quantity of *Kurchicine* as determined by the Baboo is 3 per cent., and the process adopted by him is different from what Messrs. Haines and Stenhouse adopted in determining the alkaloid of *kurchi*. The percentage quantity is analogous to the quantity of quinine yielded by the best cinchona barks.

The seeds *indrayav* contains 29·8 to 30 per cent. of oil, which does not correspond with the quantity determined by Baboo Kanye Lal Dey.† The way in which the experiments were conducted in extracting the oil from its seeds, and the process adopted for the determination of its percentage, leave no doubt in my mind as to the accuracy of Baboo R. C. Dutt's analysis.

Kurchi has been used by Indian practitioners for a long time. It is now proved beyond reasonable doubt, that it

* Vide the Chemical Examiner's report for the year 1879-1880.

† Vide Baboo Kanye Lal Dey's *Indigenous Drugs of India*, p. 124.

has an almost specific action in dysentery, especially of the chronic variety. Dr. W. Ainslie says that it is a "valuable tonic and febrifuge, and is especially given in dysenteric affections in the form of decoction in 2 oz. doses twice or thrice daily. An infusion of the seeds is prescribed as a gentle restrainer in bowel complaints." Mr. Rheed in his 'Hortus Malabaricus' advocates the use of decoction of the seeds in ardent fevers, also in gout and worm cases. In Dr. W. B. O'Shaughnessy's opinion "the bark (Conessi bark) is astringent and bitter, and also deemed febrifuge. *Conessi* bark has been given with much advantage in chronic dysentery. The infusion seems the best form, 4 drachms of the dried and powdered bark being infused in 8 ounces of water for an hour. Dose one ounce thrice daily."

From my own personal knowledge I can assert that the *kurchi* is a most valuable remedial agent. Cases of dysentery, either acute or chronic, complicated or uncomplicated with fever, have all been benefited by its administration. *Indrayav* powdered or infused in warm water, has been found very useful in mild forms of dysentery, complicated with worms in children. The oil of *indrayav* can be used as a safe expeller of round worms both for children and adults; but it has to be proved whether it possesses any specific action over the disease itself.

Kurchicine is the active principle of *kurchi*—the bark of *Wrightia antidysenterica*. It is white, non-crystalline, and very bitter to the taste; readily soluble in alcohol, ether and dilute acetic acid, less readily soluble in chloroform and benzine. From acid solutions it is precipitated by soda, ammonia and potash. The solution of *kurchicine* in ether and alcohol, on spontaneous evaporation, yields no crystalline residue. It fuses at a temperature below 100°C. Bichloride of platinum and potassium chlor. iodide of mercury produce respectively yellow and white precipitates. In neither instance is the precipitate crystalline.

The above is a short *resumé* of the physical and chemical characters of the alkaloid of *kurchi*. It can be prescribed either in the form of a powder or solution, prepared by dissolving two grains of the alkaloid in an ounce of water

by addition of a little acetic acid. The dose of the powder being from 2 to 5 grains. The solution is the most convenient form. I have used this solution not only in cases of pure uncomplicated intermittent fevers, but also in dysentery with or without fever. From my limited experience, I can safely recommend *kurchicine* as an admirable antiperiodic in no way inferior to the *cinchona alkaloid* which we daily use in hospitals. It does not produce nausea, vomiting, headache or any other unusual symptoms so often observed when the cinchona alkaloid is pushed in large and repeated doses. In dysentery it is seen to control the fever first, and subsequently the intestinal flux. But whether it is a specific for dysentery, requires proof. Though it may not be so effective as the extract or the concentrated decoction of the bark, yet it is a great remedy for those forms of fevers that are complicated with bowel complaints.

Dr. J. M. Coates gave it a fair trial in his wards in the Medical College Hospital. A short abstract of the cases treated with *kurchicine* has been prepared by his house physician Raboo Kasinath Ghose, and been placed at my disposal, of which I shall speak presently.

English medical men generally use *kurchi* either in the form of a decoction or an extract. The Hindus have been using it from a very remote period in various forms. Their prescriptions are so very complicated that a few only can be utilized by the profession. They are as follows:—1. Expressed juice; 2. fluid extract with ginger and *átis*; 3 compound decoction known as *Kutajashtaka*; 4. *Panchamulyádi*; 5. *Kutajaputapáka*; 6. *Kutajadárim kasháya*; 7. *Kutájárishta* or tincture of *kurchi*. A better and more convenient substitute for the last can be had by macerating four ounces of *kurchi* in a pint of rectified spirit. The above preparations were put to the test and found efficacious, and I have no hesitation whatever in recommending their use.

The following are a few cases in which *Kurchicine* was given as an antiperiodic by Dr. Coates.

Case I.—Narain, a native Mahomedan, æt. 45, a coachman by occupation, living at Armenian Ghaut (Calcutta),

was admitted into the 1st Physician's wards, Medical College Hospital, on the 2nd of August 1880, with symptoms of intermittent of the quotidian type, without any complications whatever. On the 3rd, his evening temperature ran up to 102.6° F., which came down to 98.4° F. the next morning, when a drachm of *Liq. kurchicine* was administered in two doses before 11 A. M. This entirely prevented the next febrile attack. The medicine was continued in thirty minim doses three times a day for the next two days. His bowels were not constipated, but he complained of a buzzing noise.

Case II.—C. Thomas, an East Indian girl, æt. 10, resident of St. Paul's Mission Home, Scott's Lane, (Calcutta), was admitted into the 1st Physician's wards on the 30th of July 1880, with continued fever without complications. At first she was treated with fever mixtures and cinchona alkaloid, which checked the fever entirely. Five days after she got a relapse, and on the morning of the 8th of August her temperature was 100.2° F. When the fever abated, three 20 minim doses of *Liq. kurchicine* were administered before the expected paroxysm. The fever did not return, but the bowels became rather costive.

Case III.—Fagoo, a Mahomedan male, æt. 18 years, inhabitant of Colootolla, was admitted under Dr. Coates with intermittent fever of seven days' duration. His eyes were jaundiced and his liver tender on pressure. No splenic enlargement. On the 7th of August 1880 his evening temperature was 100.6° F., which came down to 98.6° F. the next morning. A drachm of *Liq. kurchicine* was given to him in two doses before the expected paroxysm, *i. e.* at 12 A. M., and in the evening the temperature was only 99° F. The medicine was repeated the next day, and the temperature came down to the normal standard.

Case IV.—Mrs. S. Johnson, æt. 30 years, came under Dr. Coates with a history of fever of 5 days' duration. Her liver was slightly tender on pressure, but no splenic enlargement could be detected. On the day of admission her evening temperature ran up to 102° F., which came down to 100.4° F. the next morning. On the following day, when fever left her

entirely, three 3 ss. doses of *Liq. kurchicine* were administered before 1 P. M., and there was no more return of the fever. The *kurchicine* mixture was repeated also the next day. Her bowels continued open, and she never complained of ringing noise in the ears or any other head symptoms.

Case V.—Jumraton, a Hindu child, æt. 8 years, was admitted into the 1st Physician's wards, Medical College Hospital, with continued fever of 8 days' duration without any hepatic or splenic complication. On the day of admission her evening temperature was 103° F. She was treated with fever mixture and cinchona alkaloid for the 1st seven days without any effect. On the morning of the 8th day after admission, when the temperature came down to 98·4° F. as usual in the preceding mornings, three 15 minim doses *Liq. kurchicine* were given to her before 1 P. M., the time of the expected paroxysm. This brought down the evening temperature to 101° F., *i. e.* a degree less than the previous evening temperature. The medicine was repeated in 20 minim doses the next day, and the fever was entirely checked. There were no constipation or head symptoms.

Case VI.—A Chinaman, æt. 32 years, came to the hospital with uncomplicated quotidian intermittent fever of one week's duration. On the day of admission his evening temperature was 101·2° F. When his skin was cool next morning, three 3 ss. doses of *Liq. kurchicine* were administered before the next febrile attack. The fever never came on again.

Case VII.—Ahmed, a Mahomedan male æt. 20, by occupation a servant, living at Ram-Bagan in Calcutta, was admitted into the Medical College Hospital under Dr. Coates on the 1st of August 1880 with fever of a remittent type of three days' standing, without any complication. On the day of admission his evening temperature was 103° F. He was treated with cathartic pills and diaphoretic mixture for the first three days. On the 4th his morning temperature came down to 98·4° F., but in expectation of the fever subsiding of itself, no antiperiodic medicine was given. In the evening, however, the temperature rose up to 104·8° F. Diaphoretic mixture was again resorted to, and in the morning of the 7th of August the temperature came down

to 101° F. Half drachm doses of *Liq. kurchicine* were given three times before the expected febrile exacerbation, but still the evening temperature ran up to 104° F. On the evening of the 8th the temperature came down to 99·6° F. by salicylate of soda, and drachm doses of *Liq. kurchicine* were given twice before 8 P. M. On the next morning the temperature came to 98·4° F. and the *kurchicine* mixture was repeated in 30 minim doses three times before the next attack. But the fever came on again, and the temperature rose to 100° F. The patient left the hospital in this state.

From the report of the above cases it can fairly be inferred that *kurchicine* is a valuable antiperiodic without those distressing symptoms that are the frequent attendants of the Cinchona alkaloid. It has decidedly been proved that even in cases where the Cinchona alkaloid fails, the *kurchicine* succeeds as in the case No. 5.

In a case of remittent fever (Case No. 7) it did signal good, and in a case of dysentery with fever treated by Baboo R. C. Dutta and a similar one that came under my treatment, it proved not less efficacious.

In conclusion, I request that the members of the Calcutta Medical Society will co-operate with me in giving this new drug a fair trial in their daily practice and favor me with the results of their experiments.

DR. HARVEY had used *koorchi* in chronic dysentery, but had found its action somewhat uncertain.

DR. CHAMBERS was in the habit of using a decoction of the bark in dysentery with excessive hæmorrhage. Dr. Chevers used to recommend its employment under these circumstances. He had also used the powder of the seeds in combination with Dover's powder.

DR. COATES had administered *koorchi* in chronic dysentery as far back as 1864, and had found it efficacious.

THE CALCUTTA MEDICAL SOCIETY.

The Eleventh Meeting was held at the Medical College on Friday, the 12th November ; DR. HARVEY presiding.

DR. MCLEOD exhibited a CARNIFIED LUNG and a PIECE OF BAMBOO which had been removed from the pleura of the same side after death. The notes of the case, drawn up by Baboo Gopal Chunder Chatterjee, M. B., are as follows :—

A Case of Empyema.

Ramjadu, a Hindoo male, aged 20, resident of Krisnanagore, was admitted into the First Surgeon's ward on 29th September 1880.

History.—While climbing a date tree about a year and half previously, the patient fell down about 8 feet on a broken chatty and received a small punctured wound in the right inter-scapular region of the back of his chest. No foreign body was found in the wound, nor was the presence of any foreign body felt by the patient about it. No cough nor hæmoptysis nor superficial emphysema was then noticed. A small painful swelling was observed about the puncture two days after the injury, this suppurated, burst and caused a sinus which has been discharging since. He began to get fever, which came on with rigor and troubled him off and on. About 3 weeks before admission the patient had a small swelling on the right side of his chest wall ; this also suppurated, broke, and formed a sinus. These two sinuses have been discharging copiously, and the patient has been getting thinner.

Condition.—The patient is emaciated, pale and anæmic ; his countenance is anxious ; ribs and articular ends of the bones are prominent. Tongue clean and moist ; appetite poor ; bowels quiet. Pulse soft, feeble and excited ; heart's action weak and rapid. Apex of the heart beats a little above its normal position. Præcordial dulness normal in position

but contracted in area. Breathing exaggerated. Movement of expansion of the chest wall is free on the left side, but very limited on the right. The ribs on the left side are more prominent than those of the opposite side, and are widely separated. The chest wall is bent a little on the right side, so that in the sitting position the body is inclined to the right side with the right shoulder drooping. There is slight lateral curvature of the dorsal spine, the convexity being directed to the left side. There is a certain amount of falling in of the right chest wall, more especially at the upper and front part. There are two small ulcers,—one in front and another on the back of the right side of the chest wall. The one in front is situated between the cartilage of the 3rd and 4th rib. It is the opening of a long sinus entering the thoracic cavity, and admits the tip of the little finger; its edges are even and undermined. The second sore is situated at the back and to the right side, immediately below the inferior angle of the scapula and within an inch from the vertebral column. This is dry, partially closed, and covered by a scab; it corresponds with the original injury, and appears to be the opening of a deep sinus communicating with the pleural cavity. On deep inspiration thin ichorous pus wells out from the anterior sinus. The orifice of the posterior sinus is situated in the centre of a puckered and depressed cicatrix. Percussion sound dull throughout the whole of the right chest; vocal resonance increased and some cooing sonorous rhonchi are audible. The left side of the chest is hyper-resonant; breathing is more or less tubular on the right side. The patient lies comfortably on the affected side.

Progress, &c.—The anterior sinus when probed appeared to run downwards and outwards into the pleural cavity. A collection of purulent matter being diagnosed in the right pleural sac, paracentesis thoracis was made on 30th September. The sac was explored by a fine trocar and canula pushed in between the 6th and 7th rib of the right side in the axillary line; oozing out of pus through the canula being noticed, a small incision was made along the track of the canula and carried carefully down into the pleural cavity parallel to the lower border of the 6th rib, avoiding the intercostal vessels.

The pleural cavity being opened, a drainage tube about 6 inches long was introduced for free exit of pus. The patient felt great relief, his breathing became easier. Next day he complained of dry cough; his temperature in the evening rose to 100.2° F.: discharge was abundant through the tube; the anterior sinus was kept protected by boracic gauze and allowed to close up. The dressings were changed twice a day for the first four days, as the discharge was very copious. On the 5th day his temperature rose to 104.2° F. Next day the fever came on with rigor and left with perspiration: slight resonance on percussion was now noticed in the right side of the chest, where respiratory murmur was somewhat vesicular: cooing rhonchi still audible. During deep inspiration and a fit of coughing welling out of pus and escape of air bubbles through the tube were observed. On the 8th day of admission the patient got diarrhoea, and suffered from it until he died. He had very high temperature from this time, and a few rigors. His breathing was laborious for about a week before his death; discharge gradually diminished, it escaped freely from the pleural cavity, and continued inoffensive. Pain in the affected side of the chest was trifling, and vesicular murmur became still more marked, and the anterior sinus ceased to discharge. Though the local condition improved, the irritability of the bowels, constant febrile disturbance and impoverished nutrition brought on extreme exhaustion. Painful swelling of the whole of his left lower limb was noticed a day before he died; the left thigh was found extremely tender, tense and somewhat hard, especially towards the inner side. The patient died on the 30th of October.

Post-mortem.—On opening the pleural cavities the right lung was found collapsed and carnified. About a pint of sanguineous matter was found in the right cavity. Both layers of the pleura on this side were thickened. A thin piece of bamboo, about 5 inches long, was found lying loose in the right pleural cavity and in the vertebral groove.

BABOO BEHARI LALL CHUCKERBUTTY, M.B., read notes of a case of MAL-DEVELOPMENT OF INTESTINE IN A NEW-BORN FETUS:—

On the 29th September last I was called upon to attend a new-born infant some five hours after birth. I found about 4 feet of the small intestine with the mesentery, protruding through an aperture below the navel. The umbilical cord was just above it, separated from the lower opening by a thin membranous partition. The pedicle of the protrusion adhered to almost all sides of the aperture except at its lower part, through which a small portion of the gut issued and receded with the expiration and inspiration respectively. The intestine was full of meconium and congested.

The only course left to me was either to replace the gut inside the abdominal cavity or to leave the child to its fate. I explained to the guardians the risk of introducing the gut back into the abdomen. On their insisting that something should be done, I at first tried to push it back but failed. Then I opened the abdominal wall on a director for about an inch downwards from the navel and tried to replace the gut, but on partially reducing the rupture the infant's state became more dangerous, and the breathing more difficult consequently I desisted from the attempt. The child died, some eight hours after delivery. The family being a rigid Hindu one, didn't like to part with the dead foetus.

This is a very rare form of mal-development, and the first of the kind that has come to my notice. It appeared to me that the gut was developed outside the abdominal wall from the very beginning of the developmental process. The abdominal wall was perfect. In other respects the child was fully developed. As there was no room left in the abdominal cavity originally for the protruding gut, hence arose the great difficulty in reducing it. Had it been a case of ordinary umbilical rupture, then the case would have been quite different, and there would have been no very material difficulty in treating it.

DR. HARVEY remarked that the intestinal tube lay outside of the abdominal cavity till the end of the third month of intra-uterine life. This appeared to be a case of both defective development of the abdominal wall and imperfect retraction of the intestine. It might be called *ectopia-intes-*

tinialis, and corresponded with cases of ectopia of the brain, heart and bladder which resulted from similar parietal defects.

BABOO AMRITO LALL MOOKERJEE exhibited a preparation of SLOUGHY ABSCESS SURROUNDING A NECROSED CRICOID CARTILAGE.

The notes of the case are as follows :—Kally Churn, a Hindu male, æt. 30, was admitted into the Mayo Native Hospital on the 7th September 1880 with symptoms of double pneumonia, from which he recovered.

On the 26th September, about 20 days after admission, during his convalescence, sponginess of the gums was noticed.

1st October.—The patient complained of pain in the gums, and on the 4th pain in his throat attended with slight rise of temperature—in the evening, 100·4° F.

5th October.—The pain in the throat increased and voice became laryngeal.

6th.—There was dyspnoea.

7th.—The laryngeal sound was very marked. Troublesome cough set in. Deglutition became difficult, and the dyspnoea became urgent.

Died on the morning of the 8th October 1880, about 4½ A. M. On post-mortem examination, on opening the larynx, a sloughy abscess was found around the cricoid cartilage which was bare. The left lung was firmly adherent to the chest-wall both anteriorly and posteriorly. The liver was found to be in a state of cirrhosis and the spleen enlarged. Other organs healthy.

DR. CAYLEY read a description of a fatal case of PULMONARY EMBOLISM.

A healthy European, 25 years of age, consulted me on the 31st July on account of severe pain and tenderness in the right iliac region, and of which he gave the following account. He had six days previously been attacked with severe griping colicky pain in the abdomen, but he went out and took hard exercise, and afterwards felt chilly and the pain became worse. The next day the pains were still severe, and as his bowels did not act he was given strong purgatives, but with no effect. For the next two days he had symptoms

of obstructed bowels, from which he got relief by enemata: but the pains persisted and became fixed in the right flank. On examination I found a deep-seated hard but undefined swelling in the right iliac region, quite above Poupart's ligament and over the situation of the cœcum. There was acute tenderness over the whole region and down the spermatic cord where there was a varicocele, but no rupture could be detected. The bowels had not been open for two days, and he had a temperature of over 101°. There was considerable general abdominal tympanitis. I considered it a case of inflammation and probably suppuration round the cœcum, and prescribed absolute rest, simple light diet, fomentations and poultices and a pill of—*Opii. gr. i., Ext. Belladon. gr. ss.* every 4 hours.

The following day, when standing upright, he had a sudden attack of excruciating pain, and fell down in a faint and became insensible; this was followed by greatly increased pain, high fever, temperature over 103°, and a hard painful swelling appeared in the right groin and running down to the testicle, and with much the character of a rupture, but there was no decided impulse on coughing. There was a history of his having been ruptured a few years ago, but the hernia had apparently been cured by his wearing a truss.

During the next three weeks the symptoms presented much the same character. There was almost constant pain and tenderness in the right iliac region; there was constant fever, the temperature ranging from 101 to 103°, and sometimes 104°F. There was always some tympanitic and general abdominal tenderness. The bowels acted at intervals by the aid of simple enemata. The effects of opium and belladonna were kept up, and cold compresses applied on the abdomen. The circumscribed swelling in the inguinal canal and along the spermatic cord subsided, but the more diffused deep-seated swelling in the region of the cœcum gradually increased and approached the surface, and in this after a time deep and obscure fluctuation could be felt about one inch above Poupart's ligament and just internal to the anterior spine of the ilium. There was evidently no interference with the psoas or iliacus muscles, and the position nad

movements of the thigh were not affected. I now, with the assistance of Dr. McLeod, after putting the patient under chloroform, opened the abscess about 1 inch above Poupart's ligament and gave exit to 2 or 3 ounces of thick gelatinous and foetid pus. With the finger in the cavity of the abscess one could readily feel the outline of the intestine which one seemed to touch directly, though there must have been the parietal peritoneum between. Two India-rubber drainage tubes were inserted and the part covered with antiseptic gauze and tow. This was at first changed daily; for a few days the discharge of pus was rather profuse, and then gradually diminished, and after three days it quite lost its putrid smell, which was very strong at first.

The fever still continued, but in a much less degree, the temperature ranging from 99.5° to 100.5° F., and the patient improved in condition, his appetite returned, and he slowly gained strength. Ten days after the operation, when the abscess was nearly filled up and discharged only a drop or two of serous fluid, he was suddenly seized with severe pain over the lower ribs of the right side with very hurried, difficult and catching breathing and high fever: temperature 103° . There was evidently a smart attack of pleurisy, but I could not detect any friction sound, and I concluded that the pleura over the diaphragm was affected. The liver was evidently enlarged, but not tender or apparently inflamed.

The symptoms of pleurisy subsided after two days, and the patient returned to his former state.

Ten days afterwards, when the abscess was quite closed and healed up, he was attacked with severe abdominal pain with flatulence and inability to evacuate the bowels on account of pain and, as it were, loss of power in the intestines. There was also much tympanitis and increased fever, and evidently some degree of peritonitis. He was treated by opium, cold compresses and simple enemata, and the next day the symptoms subsided. After this he rapidly improved: the fever entirely ceased. His appetite was good and bowels acting regularly and naturally, and he was up and walking about; but 5 days after the last-named attack, when sitting up in the evening and having felt perfectly well all day, he was suddenly at-

tacked with difficulty of breathing, and in a few minutes he was gasping for breath and died within half an hour.

I could only attribute this sudden death to embolism of the heart or lungs.

In making the post-mortem the next morning Dr. McLeod gave me his valuable assistance. On opening the abdomen the greater part of the peritoneum and surface of the bowel was free from disease, but in the neighbourhood of the cœcum and round the right side and back of the bladder and in front of the rectum the peritoneal surface was covered with recent lymph, and in parts a thin layer of pus. A portion of the small intestine also was adherent to the side of the cœcum, and on separating them the thinned and softened coat of the intestine gave way. The vermiform appendix was greatly enlarged, and contained a firm egg-shaped roundish mass as big as the end of one's little finger; over this the walls of the appendix were perforated by ulceration.

The original abscess in the right iliac region was quite closed up and obliterated. The right side of the bladder was thickened by a dense mass of what seemed to be inflammatory deposit.

The liver, kidney and spleen were all enlarged and greatly congested.

Chest.—Pericardium contained a little serum. *Heart*: Right side greatly distended by dark fluid blood with a soft clot running up into the pulmonary arteries. Left side empty.

Lungs.—At numerous points in the pulmonary arteries there were lodged large firm fibrinous clots varying from $\frac{1}{2}$ inch to 3 or 4 inches in length and branching into the division of the artery: they were generally of dark brownish colour. In several places, and mostly associated or connected with these clots, were isolated portions of condensed lung tissue of a dark colour: the greater part of the lungs being normal and collapsing when the chest was opened. There was a little serum in the right pleura. These thrombi were less numerous in the right than in the left lung, but there was one large patch of condensed and almost hepatised lung in the lower part of the posterior obae, over which the pleura was adherent to the upper part of

the diaphragm. This was evidently the result of the sudden attack of pleurisy he had in the course of his illness.

The egg-shaped mass found in the vermiform appendix on being cut through appeared to be composed of hardened inspissated fæcal matter surrounding a bit of some hard substance or nucleus. This and some of the fibrinous masses from the pulmonary arteries I sent to Dr. McConnell who kindly examined them and sent me the following description:—

1. “The coagula are very firm and partially laminated; I think it quite possible they may have formed shortly before death. There appears to be no extraneous substance with them. I can only see altered blood-cells and fibrin under the microscope.

2. The fæcal concretion (the half that was left) on breaking up gently I found to contain several very distinct bits of thin nut-shell,—very like that of what the natives call *cheena-badam*—(I have no doubt you know it), and a few bits of a whitish almondy material like the kernel. On examining under microscope, the vegetable character of the former (pericarp) was quite distinct, both straight and spiral vegetable fibres being seen. The kernel-like stuff was too opaque to make anything out of. My own idea is therefore that a *cheena-badam*, or portion of one, must have been swallowed whole by your patient, that it was undigested, got into the vermiform appendix, and there gave rise to irritation. The encrusting material is purely fæculent.”

From inquiry made afterwards, I learnt that the patient had previously been eating *Pista* nuts, so that it was probably a bit of one of these had been swallowed with its shell,—and not a bit of the nut *cheena-badam* as supposed by Dr. McConnell—probably some time before, and had been the direct cause of all the mischief,—the abscess near the cœcum, the localized peritonitis, and then perforation of the coats of the appendix. The sudden and extensive thrombosis in the pulmonary arteries was probably due to the altered condition of blood in some way set up by the peritoneal inflammation.

It is rather remarkable that for five days before death there was normal temperature, and the patient was up and about,

and in fact convalescent, and yet there was rather active inflammation of peritoneum with not only lymph but a distinct smearing of pus on the surface, as seen in the P. M. examination.

DR. McLEOD said that, having assisted Dr. Cayley both at the operation and post-mortem examination, he was in a position to confirm the accuracy of the description of the interesting case which Dr. CAYLEY had related. It appeared to him that the pulmonary clots were of pre-mortem formation, and probably resulted from a septic state of blood caused by the recent septic peritonitis. The original abscess appeared to have arisen outside of the intestine from the irritation caused by the foreign mass or concretion, and the later peritonitis from perforation due to ulceration set up by it.

He related cases in which foetid abscesses had been set up in the iliac region by perforating ulcerations of appendix and cæcum without implication of peritoneum. The appendix was a frequent cause of pathological trouble, and it was difficult to conceive its physiological use.

DR. HARVEY read the following paper ON THE USE AND ABUSE OF ERGOT IN LABOUR:—

Of all the ecbotic or oxytoxic drugs ergot is the one most used and most trusted by the profession. It is in constant request, and forms a part of the armamentarium of every obstetrician. Such being the case, and the medicine being a powerful agent for evil as well as for good, no apology is required for bringing before you a few remarks on the subject of its use and abuse; the cases in which it is applicable or permissible; the limitations which should be placed on its employment, and the cases where it is inadmissible.

It is a curious fact that while the disease known as ergotism from eating grain affected with the spur was described so early as 1069, and repeated epidemics of it occurred during the next six centuries, it was not till 1688 that the ecbotic properties of the diseased grain were brought to the notice of the profession by Camerarius, who found it in common use among certain German midwives. His observations however were ignored, and a hundred years

later, in 1774, Parmentier put before the profession in Paris as a new discovery that a Mde. Depille, a midwife at Chaumont, used it as a secret remedy to facilitate parturition. Tessier and Desgranges then took up the subject, and from the publication of their researches in 1777 professional knowledge of the subject may be said to date. Yet so little interchange of professional knowledge existed at that time, and so strong was the English prejudice against foreign notions, that English practitioners remained in ignorance of the discovery until they heard of it through American *confrères*,—then as now always ready to try new remedies and specially inclined to adopt French views. It is to Dewees and Hosack of Philadelphia and Stearn and Chapman of New York that we owe our original knowledge of it, and Merriman and Davies were the first—so far as I know—to use it in England, about the year 1820. Its reception was a very varied one, and as its undoubted powers led to its use in many unsuitable cases, both its friends and enemies had much valid argument at command. One of its most enthusiastic advocates, Mitchell, wrote a pamphlet on its merits in 1828, in which he says that he considers it so valuable that he should not be surprised if in twenty years the forceps were only known by name,—a singularly unlucky prophecy. Hosack, on the other hand, considered it so deleterious that he suggested a change of its popular name *pulvis ad partum* to *pulvis ad mortem*. The advocates claimed that it facilitated labour immensely without injuring either mother or child. Their opponents that it did not facilitate labour; that it was dangerous to the mother, destructive to the child, and altogether objectionable and immoral, since it would be used in unsuitable cases and afford facilities for procuring abortion. Even Ramsbotham, who approved its use in proper cases, considered it necessary to describe many of its effects in Latin, and counsels us to diligently conceal its powers from the commonalty, and especially from women. In controversies of this kind it commonly happens that there is a good deal of truth on both sides, and the experience of sixty years has shown us that it was so here. The good to be obtained by ergot ha

borne down opposition until, as I have said, it is in daily use ; and it is because I think the evil effects which it sometimes causes are in danger of being lost sight of that I call your attention to the subject to-night. It was in cases of lingering labour that it was first used ; and it is still largely—too largely I think—used in such cases. Yet it is not in such cases that it is chiefly valued by the modern accoucheur. Save in exceptional cases, he has other and better means of accelerating a lingering labour. It is as a preventive and controller of hæmorrhage that he finds it most useful. Experience has to a considerable extent maintained the objections of Hosack and Hardy, and while utilising and extending the powers of the drug for good, had taught us to do so in a somewhat different direction, and also to avoid the dangers which tended to bring it into disrepute.

The power of ergot to induce, prolong and intensify (for a time) uterine contractions was frequently denied at first—no doubt owing to the use of inferior preparations—but is now universally admitted. It is found however that these contractions vary greatly in character from those of normal labour. They are, as a rule, tonic instead of clonic ; they remit but they do not intermit. The walls of the uterus become persistently hard and rigid, and the foetal circulation is interfered with. The uterine vessels passing through the interlacing fibres of the muscular coats are squeezed and compressed, their calibre is diminished, and the exchange of gases between the foetal and maternal blood seriously interfered with. Hardy found that under these conditions the foetal heart sank to less than 100, became intermittent, and finally ceased : and he lost 20 out of 30 children. The contractions are sometimes so violent that rupture of the uterus has occurred several times, and if the os uteri is not fully dilated before the ergot is given, the persistent and rigid contractions make it less ready to dilate, and the effect of the drug is to make things worse than before. Schatz has shown by means of an instrument called a toko-dynamometer or measurer of labour power, that the internal uterine pressure is greatly increased by ergot, but that the pains though more frequent become less efficient owing to the general

rigidity of the uterus, and finally cease ; just as they do in very protracted or obstructed labour when tired nature gives up the struggle, the uterus remaining in a state of persistent rigidity. Schroeder goes so far as to say that it is useless for the expulsion of the child, and sometimes dangerous.

Here then we have three undoubted and admitted facts. *1st*, that ergot causes, in a large proportion of cases at least, uniform persistent rigid contractions of the uterus, without the periodic relaxations of natural pains. *2nd*, that these contractions interfere with the foetal circulation and endanger the life of the child. *3rd*. That they interfere with the dilatability of the os and soft parts.

The bearings of these facts on the employment of ergot are manifest, yet they are frequently overlooked, although they are mentioned in the text books. If we give ergot in forgetfulness of them we shall have reason for regret ; but I have repeatedly seen forgetfulness. Unless labour is speedily ended after the drug begins to act, the child will probably be dead, the uterus may rupture, or other complications may arise. It is therefore clear that if there be any obstacle to speedy delivery, ergot is inadmissible. If the os be imperfectly dilated, if it be rigid, if the pelvis be narrow or the child large, if there be mal-presentation, or any obstruction of the soft parts, ergot is counter indicated ; also if there be any head symptoms or general irritability of the woman's system, since ergot sometimes causes headache, delirium or coma, Schroeder considers that it is admissible only when the expulsion of the child is almost complete ; and never admissible except in cases where delivery can be artificially effected at any moment. Playfair lays down clearly the cases in which it may be used. When the first stage is over and the os fully dilated ; when former labours have proved the pelvis roomy, and when the perineum is soft and dilatable. He thus excludes its use in primiparæ. Leishman considers that the dangers are overstated, and that, provided proper precautions are observed, there is no reason why it should not be used in primiparæ. Simpson's rules are similar to those of Playfair ; he thinks it should very rarely be given to primiparæ. Now, gentlemen, I think that

while rules are valuable we should not be their slaves, and that it is occasionally allowable to give ergot to primiparæ—allowable at least to men of large experience. I think however that in most cases and in inexperienced hands, it is an abuse of ergot to do so, for even when all conditions were apparently favourable, I have seen children sacrificed by the practice. The delay caused by the stretching of the soft parts in a first labour is sometimes counted by hours, and with a strongly contracted uterus the life of a child may be an affair of minutes. You may ask why, with such clear instructions laid down in the books, I should take up the subject. It is because the instructions of the books are so frequently disregarded that I do so, because ergot is sometimes given with a view to accelerate a labour for the convenience of the attending accoucheur. Let me give you a few examples of the abuse of ergot. I have never myself seen rupture of the uterus caused by it, but numerous cases are on record, and Dr. Bedford of New York has no less than four specimens in his museum. I have seen a case however where rupture was imminent. In 1863, when Resident Surgeon Accoucheur at the Birmingham Dispensary, a young medical man, a pupil of my own, being engaged with a case which threatened to prevent his keeping an appointment, gave ʒi. of the liquid extract of ergot to a woman whose os was only dilated to the size of a rupee. Within ten minutes such powerful contractions came on that he thought the uterus would rupture, and sent for me; I got to the house within half an hour of the administration of the dose. I had never before—I have never since—witnessed such powerful contractions, and I experienced quite as lively fears as my pupil that the uterus would give way. The os had dilated to the size of a good-sized coffee cup, and was fortunately soft and dilatable. The lower segment of the uterus with the head in the first position was engaged in the pelvis, but still high up. The need for delivery was urgent. The books of that day had rules inflexible as the laws of the Medes and Persians, and one of the most rigidly defined of these was that the forceps were inadmissible until the os was fully dilated. Craniotomy or turning were the alternatives open to me by

rule. The child was however still alive, and moreover craniotomy would not have effected immediate delivery. The membranes had ruptured, and the uterus was so closely applied to the child's body that the operation of turning would very probably have caused the rupture it was intended to prevent. I said just now that we must not be slaves to rule. Our difficulty had been caused by the infringement of one rule, I got over it by breaking another, and a much more stringent one. I applied the long forceps through the half-dilated os in fear and trembling, and after using a good deal of force, very carefully regulated however, succeeded in getting the head down and accomplishing delivery. The child was born asphyxiated, the funis being almost entirely empty of blood, but by keeping up artificial respiration for nearly half an hour and allowing a teaspoonful or so of blood to flow from the untied funis, we succeeded in establishing respiration. The child lived and the mother recovered without a bad symptom, thus justifying the means adopted. There can be no doubt however that the mother was at one time in serious danger, and the child barely escaped with its life; and the administration of the ergot in the first instance was a grave mistake. We do not always find such a happy issue out of our errors. On another occasion, in my own practice, I was sent for to give chloroform on account of the violence of the pains. The woman was a primipara, and had been in lingering labour for 46 hours when the pains ceased. The midwife wrote to a medical man for something to bring them back, and was without enquiry given a mixture containing a drachm and 40 minims of the liquid extract of ergot with instructions to give a dose every 20 minutes till pains came on. No caution was however given. No effect was produced till the 3rd dose, when contractions began to recur; a fourth dose was given which made them stronger, and the midwife—a diplomaed nurse—thinking to clinch matters and finish the labour speedily, gave a fifth dose 20 minutes later, which at once spurred the uterus to continuous contraction. On arrival I found the pains almost continuous, and the uterus remaining unrelaxed and hard during such small remissions as there were. The head had

reached the floor of the pelvis and was beginning to distend the perineum. The perineum and vulva were very dilatable for a primipara. The heart sounds could not be heard, but the motions of the child had been felt not half an hour before. I had no forceps with me, so I gave chloroform freely in the hope to mitigate the contractions. It had little or no effect, strong contractions succeeded one another with alarming rapidity, and before the forceps came the child was born dead about three-quarters of an hour after my arrival. The cord was perfectly bloodless, and although artificial respiration was persisted in for half an hour, the heart never beat, and there was no attempt at respiration. The medical man who prescribed the ergot knowing nothing of the case, justified himself by saying he had given the minimum dose, 20 minims, and that the midwife ought to have known better than to give more after the 3rd dose had acted. She ought to have done so certainly, but the case is an instructive one as showing the want of care in prescribing it which too great confidence in ergot engenders. The child, which was a perfectly healthy one, was sacrificed by the want of care. Had the mother been a multipara the pains would have completed labour at least half an hour sooner and the child might have escaped. Had I had a pair of forceps with me I might have saved it. A somewhat similar case occurred to me not long ago. The woman was a multipara, and had had rapid labours. On this occasion the breech presented, and as is usual in such cases progress was slow in spite of good pains. The woman was urgent for something to help her, and two doses of ergot were given by the medical man in attendance with the effect of bringing on continuous pains, which however did not appear to advance matters much. I was sent for in consultation, and arrived just as the child was born. The cord was bloodless and the child quite dead. No delay had occurred in the delivery of the head, and I have no doubt in my own mind—judging from the bloodless condition of the cord—that this child also died from the abuse of ergot. Many years ago a precisely similar accident occurred to myself, and was—with the first case mentioned—the means of calling my attention to the subject and making me very chary of

using ergot at all before the birth of the child, or at least before the expulsion of the head. I have seen several other cases both in my own practice and that of others where similar catastrophes have only just been avoided, and they are I think sufficient to justify my contention that the risks of ergot are hardly sufficiently appreciated, and are good examples of the *abuse* of the drug. None of them could have occurred had the clear and definite rules laid down by Playfair or by Simpson been followed; and my main object is to enforce attention to those rules. I have told you that Schroeder—who we may take as a typical representative of German midwifery—considers that ergot is useless in aiding the expulsion of the child. I agree with him up to a certain point, and think that it does little or no good so long as the head is within the uterine cavity. Indeed by causing a rigid condition of the os, it may delay instead of accelerating delivery. I am sure however that when the head (or breech) is at the vulva or on the perineum, and is delayed by nothing but the feebleness of the uterine contractions, that ergot has a distinct effect in quickening the progress of the labour. Whether it is often advisable to make use of its power is another matter, but the power is there. Personally I seldom give it now in such cases, because I think compression of the uterus, or the forceps better and safer, and quite as sure and rapid; but I have given it, and seen it given scores of times, with the best effect and without any ill consequence. One example will suffice. It occurred in the practice of the same pupil who gave the ergot in the case first quoted. I saw the patient with him in the morning. She was a multipara, the os was half dilated, and every thing was favourable except that the pains were slight. I left him in charge of the case, and was summoned 12 hours later because the labour was not completed. I found the head at the vulva, it had been there for hours, but the pains were few and extremely feeble. Warned by his previous experience, my pupil said “he had had enough of ergot,” and had passed the whole day waiting. I gave half a drachm of the liquid extract which acted in ten minutes, and the second pain brought the head into the world. It is not however in those cases, it is not as an accelerator

of labour at all that the main use of ergot lies. Its peculiar action on the uterus and the consequent danger to the child, unless delivery is very rapid, make it always of doubtful expediency in them. It is as a preventive of hæmorrhage that we value it. What we want after the child is born is to induce strong, persistent, rigid contraction of the womb by which to diminish the calibre of its vessels and favour their occlusion. The special effect of ergot, which was its chief objection before, is just what we want now, and the more powerfully it acts the greater the security against flooding. This use of ergot is I think hardly sufficiently recognized. The ergot is commonly not given until the flooding has begun, and here, though it often succeeds, it sometimes fails. As a preventive of hæmorrhage it is best given just as the head is passing, and it has been the rule for years in the Medical College Hospital to give a dose to all patients at this time. It begins to act about the time that the placenta becomes separated, and on expressing the latter the hand following the uterus will find it firmly contracted, and firmly contracted it remains. I had a case a few days ago where the patient, who had had severe floodings after each of three previous labours, and who had been warned to have ergot and iron and ice and sponges in the house; she did not lose a wine-glassful of blood altogether; and since I have adopted the plan of giving a dose of ergot in the manner stated, I have had far less post partum hæmorrhage than I had before. In this country the relaxing effect of the climate makes this a much more frequent occurrence than it is in England, and it is therefore specially necessary to take precautions against it. One of the best and simplest is to give 30 or 40 drops of the fluid extract of ergot just as the labour is about to end. This I look upon as the main use of ergot in labour, and although I do not give it in every case, I am coming to use it more and more freely in this way, and less and less frequently as an ecboic or accelerator of labour. The cases I have quoted show its value and its dangers, and will I hope serve to impress on you the necessity of caution in its use, and of discrimination in the cases suitable for its employment in labour. It is also of great use in exciting a sluggish uterus

to action after the birth of the child and before the expulsion of the placenta. The continuous contractions set up can here do no harm, and the os has already been so fully dilated that it is not likely to be made rigid, although this is said to occur occasionally. Another use to which I put it, is to prevent or relieve afterpains. These are, as you know, caused by the alternate relaxation and contractions of the uterus after delivery, and if you keep the womb as firmly contracted as possible, the pains will be much less severe than they would otherwise be.

It does not fall within the scope of this paper to discuss its use in disease, but there is there less scope for its abuse, and no risk of fatal accident as a rule.

BABOO KANNY LALL DEY had seen a case of rupture of the uterus caused by ergot. It was in an old Chinese woman whose body had been sent to him for post-mortem examination. She had procured the drug from a druggist who had become famous for it. The bottle contained a syrup in which a powder was suspended. She was an elderly woman ; the os was rigid and the rupture had taken place at the fundus.

Dr. K. G. SIRCAR had seen a case of abortion in which the drug had been given freely. The pulse became intermittent. The membranes were removed and no bad result followed. The dose employed was 30 drops of the liquid extract every two hours. Dr. Sircar had seen a case of rupture of the os uteri following its use. He was disappointed in the use of the drug in post partum hæmorrhage while the bleeding was in progress.

Dr. McLEOD had found the drug produce intermittency of the heart's action. This and the mental depression and confusion of ideas sometimes following its use were attributable to its power of contracting the muscular fibres of small arteries, a power which rendered it so useful in uterine vesical and rectal hæmorrhages. He had found it useful in rectal dysentery.

Mr. WALLACE observed that he had recently found the local application of ice of great service in a case of dysentery. Lumps of ice had been introduced into the rectum.

THE CALCUTTA MEDICAL SOCIETY.

The Twelfth Meeting was held at the Medical College on Wednesday, the 8th December; DR. CAYLEY presiding.

BABOO LALL MADHUB MOOKERJEE read the following notes of a CORNEAL TUMOUR which had been removed by Dr. Cayley, and exhibited the globe of the eye which it had subsequently been found necessary to extirpate.

Kodom, a Hindu female, æt 40, admitted into the Eye Hospital on the 22nd October 1880, with a small warty-looking mass protruding from the right eye. States that about 1½ years ago she first noticed a fleshy-like growth of about the size of a mustard seed growing near the external angle of the right eye, which gradually increased and extended to the outer edge of the cornea, where it attained the thickness of a pea. No history of injury or conjunctivitis. With this she attended the out-door department of the Eye-Infirmiry. About 7 months ago she made up her mind to undergo operation, and became an in-door patient and had the growth shaved off. Three or four months after her discharge she noticed the recurrence of the same growth on the same site. The new growth was rapid. When re-admitted, it was found not only to have encroached on the outer part of sclerotic, but extended over nearly the whole of the cornea, leaving only a rim of clear cornea at its inner part. The mass looked white, fleshy and uneven, of about 3 lines in thickness; the thickest part was at the corner; and the mass was so intimately connected with the cornea that it had abolished vision. The mass of growth had been causing considerable irritation of conjunctiva; there was constant lachrymation and an uncomfortable sensation, though not painful, on every closure of the lids. Her eyeball was extirpated by Dr. Cayley on 2nd November 1880, and sent to the Medical College Musuem. Dr. McConnell, Professor of

Pathology, very kindly furnished the following notes regarding the pathological condition of the eye :—

“It is a small soft warty-looking mass covering the greater part of the cornea, and a considerable portion of the adjacent sclerotic, especially on one side. It is raised from 2 to 4 lines above the surface. On section has a dull opaque-white colour, and is seen to be confined entirely to the parts indicated—not penetrating the eyeball. The portion of cornea remaining uncovered by the growth is about the size of a split-pea, and is brownish, thickened and leathery. The eyeball being bisected, the sclerotic, choroid, retina and optic nerve present nothing remarkable or abnormal, but the lens is quite opaque and hard. Examined microscopically the little growth is found to consist of papillary tufts composed of rounded and flattened epithelium, lying very closely set or packed together, and only here and there separated by a little very delicate connective tissue. The flattened cells are situated superficially, the rounded cells more deeply, and all are distinctly nucleated. Quite at the base of the growth small cells or nuclei are found—probably germinating young epithelium, and the appearance is therefore as if the growth had originated in the ocular conjunctiva on one side of the cornea, and gradually spread over and involved the superficial surface of the latter. There are no “nests” and no great difference in the size or shape of the epithelial cells composing the growth, which therefore is probably simply papillomatous not *epitheliomatous* (*i. e. cancerous*) in character.”

Baboo Lall Madhub Mookerjee added.

I would pronounce this tumour of uncertain nature, as we cannot reconcile the fact that though this tumour had no conjunction with the palpebral conjunctiva which was free from disease, still Dr. McConnell found papillary tufts to be mixed in the composition of this growth. We are all aware that the sclerotic conjunctiva has no papillæ. There is no doubt that the growth does not present the usual signs of cancer from its histological features, and from the absence of pain and infection of the neighbouring glands, but on the contrary appears to be benign, yet when the patient

left the hospital after the second operation, we noticed a mass of growth springing from the bottom of the orbit. I leave the Society to decide its nature.

DR. CAYLEY remarked that the most remarkable feature of this case was the recurrence of the growth, which at first looked like a pterygium. Its recurrence after ablation and the total blindness which the recurrence caused, induced him to resort to the extreme measure of extirpation of the globe, and even after that very radical expedient had been resorted to, a second recurrence was observed when the patient left the hospital.

DR. MCLEOD thought that the growth was a sarcomatous papilloma,—a species of tumour described in Billroth's Surgical Pathology.

BABOO DEVENDRA NATH DEY read notes of an EPITHELIO-MA OF THE RIGHT EYE.

Ariff, a Mahomedan cultivator of Basirhat (24-Pergunnahs), æt. 60, was admitted into the Hospital on the 17th November 1880 with total disorganization of his right eye and an ulcer at its outer angle. The patient stated that about 2 years ago he first noticed constant and profuse lachrymation from his right eye, with itching sensation inside the orbit. This led him to rub his eyelids frequently with his fingers. An ulcer soon afterwards broke out at the outer canthus of the right eye; in spite of this he kept on rubbing his eye over the sore, which thus went on increasing until it became about $1\frac{1}{2}$ inch long. After a year he noticed impaired vision in the affected eye, which gradually increased until all sight by that eye was entirely destroyed.

On admission the right eye was found to be disorganized, there was sloughing of the whole of the cornea with chemosis and redness of the surrounding conjunctiva. The eyeball did not protrude from its socket but was hard and tense to the feel, and there was an ulcer about $1\frac{1}{2}$ inch long extending from the outer canthus of the right eye towards the temporal region. The skin and the subjacent tissues around the ulcer were much thickened and indurated. The eyelids were healthy, but their tarsal margins were a little swollen and œdematous.

On the 21st excision of the eye was performed under chloroform and the bleeding points cauterized with the red hot iron and a strip of lint with carbolic oil introduced into the orbital cavity. The thickened epithelial tissues around the ulcer in the outer canthus were removed together with the outer $\frac{3}{4}$ ths of both the tarsal margins to the extent of about $\frac{1}{4}$ inch in breadth and oiled lint put over the wound, and the whole covered with wet carbolic dressing. The tumour appeared to have grown from the lachrymal fossa, where it was found to be deeply adherent, and was partially incorporated with the lachrymal gland. It was not pedunculated, and was attached by a broad and rugged base to the orbital plate of the frontal bone. The lachrymal gland was found to be of somewhat firmer consistence and larger than the normal gland.

In the evening the temperature rose up to 101° ; much pain complained of in the operated eye. There was some oozing of blood which soaked the dressings. An opiate was given at bed time, and the patient kept on sago and milk diet.

22nd.—Morning temperature 99° , evening 103.4° : the dressings were left untouched; same diet and the sleeping draught continued.

23rd.—No fever; in the morning 101.6° , in the evening the dressings were changed, boracic ointment put over the ulcer, and oiled lint inside the orbit, which assumed a sloughy appearance: pain just the same.

24th.—Slight rise of temperature in the evening; same dressings continued; ulcer inside the orbit still sloughy; pain little less: ordered half diet.

25th.—From this day the patient was free from fever, the pain gradually lessened, but the sloughs were not separated from inside the orbit till the 1st of December, when healthy granulations appeared at different places; sloughs clearing off; pain almost dwindled down into mere itchiness inside the orbit. Since then the patient is fast improving, ulcer granulating fairly, discharge healthy and sweet: no pain in the eye.

DR. McLEOD exhibited a specimen of LYMPH SCROTUM which he had removed, and the parts from which the growth had been excised.

The patient was an adult Brahmin æt. 32, a resident of Raneegunge. He had been subject to fever for three years, which came on about twice a month, and was accompanied with swelling of the scrotum; an exudation of serum from the surface followed and relieved the swelling. These recurrent attacks weakened him. He was a poorly nourished delicate looking man, and had been in the habit of taking 24 grains of opium daily.

On admission the penis was found healthy and the scrotum swollen, sodden and spongy. A clear fluid could be pressed out of it or removed by puncture, which contained a little fibrine and a few blood corpuscles and leucocytes. A subcutaneous spongy swelling existed in each groin extending down over Poupart's ligament. No filariæ were discovered in the fluid. The enlarged scrotum was removed antiseptically on the 7th of November; the penis was not decoricated, and lateral flaps were taken from the thighs which were stitched over the testes with catgut sutures and brought close to each other. The patient did not suffer from shock, fever nor local inflammation. The wound remained aseptic and repair set in satisfactorily, the lateral flaps remaining *in situ* and adhering to the surface of the testes.

On the 13th he got fever with rigor, and this was followed by angeioleucytis over the right arm and painful enlargement of the right axillary glands. Soon after, fever persisting, a similar condition was observed on the left side, and on the 19th signs of thoracic inflammation were noticed. Diarrhoea accompanied these conditions. He died on the 21st—15 days after the operation. The testes were found embedded in cicatricial tissue and covered with healthy granulation material connecting the edges of the flaps. The wound was in process of satisfactory repair, and there was no trace of suppurative inflammation in or near it.

The inguinal swellings were found to be lymphangectases exuding a milky fluid. The lymphatic vessels on the inner side of both arms were seen to be dilated, surrounded by a serous exudation. The glands in the right axilla were in a state of acute hyperplasia, and those in the left in

a condition of acute engorgement. The lungs were acutely engorged, and evidences of recent pleurisy and pericarditis existed.

The case was remarkable as showing a proneness to pathological changes in the lymphatics and illustrating the very satisfactory manner in which wounds resulting from scrotal ablation healed under antiseptic management.

DR. MCLEOD also showed the bladder of a patient who had been the subject of LITHOTRITY. He remarked that frequently more instruction was derived from unsuccessful than from successful cases, and this was an instance in point. An elderly Hindu æt. 55, came into hospital with symptoms of stone in the bladder. The calculus was easily detected. Thompson's sound discovered a stone with gritty surface lying on the floor of the bladder, about $\frac{1}{4}$ inch in diameter, and the instrument revealed a smooth and capacious bladder beyond. No irregularities were detected.

The stone was very distinctly felt per rectum behind the prostate, and its shape and size were approximately ascertained by pressing on the abdominal wall while the finger remained in recto.

As the patient was elderly, the prostate not enlarged, the urethra wide, the bladder smooth and dilatable, the stone friable and no albumen was found in the urine, it was considered a good case for lithotritry. The lithotrite impinged on the stone, and on pressing it down to grasp it the calculus slipped backwards. The instrument was held in Brodie's position and felt per rectum to occupy the place where the stone had been. The stone could not be got to fall into its grasp, nor would the lithotrite travel back on the floor of the bladder. On closing it for withdrawal, it was found to grasp something soft. It was opened, moved about, and again closed. It was still held, and after being opened and closed a third time, was withdrawn with some difficulty. Shreds of tissue were seen between its blades. Under these circumstances, the operation of lateral lithotomy was at once performed. The stone was found beyond a thick uneven ridge running transversely across the floor of the bladder and extracted without much trouble. It consisted of alternate layers of urates

and phosphates. Symptoms of peritonitis set in on the second day, and the patient died of this disease on the 4th day. The bladder showed a sac situated behind the prostate gland in which the stone had been lodged. This was bounded posteriorly by the thick prominent ridge which had been felt on cutting the patient; behind this a rough hole existed, opposite to which there was a short oblique rent in the peritoneum. The instrument had got into this sac, displaced the stone, the ridge had entered between the blades and the hole had been caused by the upper or male blade, and the rent in the act of forcibly withdrawing the instrument. There was no reason to believe that the stone lay in a sac. A careful exploration had not discovered it. No force had been employed in handling the lithotrite, and the unfortunate accident was one that could hardly have been anticipated or avoided under the circumstances.

MR. J. R. WALLACE read a paper on the STATISTICS OF TETANUS IN THE MEDICAL COLLEGE HOSPITAL.

The frequency of tetanus in Bengal as evidenced by the records of the Medical College Hospital,—which represent fairly a very large section of the prevailing diseases which come under observation throughout this presidency—and its participation in augmenting the mortality in surgical operations, as further demonstrated by reference to the practice of surgeons connected with this largest of Indian hospitals, make a brief summary of their experiences worthy of our notice, not only as being interesting but instructive.

The notes on tetanus in the Medical College Hospital, which I am about to read, consist of an analysis of a tabulated statement of cases kindly placed at my disposal by Dr. McLeod, and some jottings from other medical and surgical records of this hospital.

During the ten years, from 1869 to 1879, there were 280 cases of tetanus admitted into the Medical College Hospital, in all of which the well marked symptoms of the disease were more or less fully developed at the time of their admission into the wards. Of these 212 died. Irrespective of these 280 cases, twenty-three others occurred in the surgical wards

following operative interference of various kinds, and all of these terminated fatally.

Of the former series of cases 159 were of the *Idiopathic variety*, the subjects being 93 males and 66 females, of whom 53 of the former and 58 of the latter died. Of the *Traumatic form* there were 121 cases, 67 males with 64 deaths, and 54 females with 37 deaths.

With regard to *age and race*; in *infants up to 14 days' old*, there were 34 cases, of which 13 were natives and 21 Europeans, with 29 deaths in all. *From 1 to 5 years*, 5 cases, 4 natives and 1 European, with 3 deaths; *from 5 to 15 years*, 23 cases, 20 natives and 3 Europeans, with 11 deaths; *from 15 to 45 years*, 195 cases, 175 natives and 20 Europeans, with 154 deaths; *from 45 years and upwards*, 23 cases, 21 natives and 2 Europeans, with 15 deaths.

With regard to *Season*, during the *Winter months*, namely November, December, January and February, this series shows 96 cases admitted, 38 from traumatic and 58 from idiopathic tetanus, with 80 deaths. The early *Summer months*, March, April and May, give a total of 71 cases admitted, 28 from traumatic and 43 from idiopathic, with 44 deaths. The *months of the Monsoon or Rainy Season*, namely June to October inclusive, show 113 cases, 53 traumatic and 60 idiopathic, with 88 deaths. The minimum of admissions was in July and the maximum in December.

With regard to the *Etiology* of this series of 280 cases, I have been able to trace the history of 117 of the idiopathic and in 94 of the traumatic, and to note the nature of the injuries giving rise to the disease. The various causes with the number of casualties from each, are as follows:—

(1.) Exposure to cold and wet	...	47
(2.) Menstruation, pregnancy and abortion	...	29
(3.) In infants under 14 days old	...	23
(4.) In persons suffering from fever, dysentery, general debility and privation, in whom there is no distinct history of exposure	...	24
(5.) Injuries	...	94

Nature of injury.

(a.) Wounds of all varieties	...	35
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(b.)	Machine injuries	23
(c.)	Contusions	13
(d.)	Burns and scalds	6
(e.)	Compound fractures	17

The duration of the disease will be ascertained from the following record of 212 fatal cases :—

Within 2 days	...	...	88 cases fatal.
From 2 to 5 days	...	...	41 „ „
From 5 to 10 days	...	...	26 „ „
From 10 to 22 days	...	...	23 „ „
Above 22 days	...	...	34 „ „

With regard to *treatment*, the records give evidence of trial to every known remedy, but the plan notably in use in all the medical and obstetric wards has been by free purgation and the administration of such anodynes and antispasmodics as Chloral, Morphia and Atropia given by the mouth and subcutaneously, Opium in combination with Ammonia, Indian Hemp, Belladonna, Potassium Bromide, and Calabar Bean. Opium smoking has been largely tried in the obstetric wards. Quinine and other preparations of Cinchona found place in the chronic cases. In the surgical wards, the removal of irritant particles, stretching of nerves and amputation have been resorted to for the relief of the traumatic form in addition to the already named medicinal means.

Results.—There were 68 cures in 280 cases, or 14·16 per cent. Of these 53 were among the idiopathic and 15 among the traumatic. In subjects under 14 days' old the recoveries were in the proportion of 1 to every 6 cases, from 1 to 5 years 1 in every 2·5 cases, from 5 to 15 years 1 in every 2 cases, from 15 to 35 years 1 in every 5 cases, from 35 to 45 years 1 in every 6 cases, from 45 upwards 1 in every 3·28 cases. After reading the notes in 46 of the cases in which recovery took place, I do not find one in which success can be attributed to any single remedy or any individual plan of treatment, though in most of them Chloral and Cannabis Indica were more largely used than other drugs. The practice in which surgical operations were performed for the relief of the sufferer has been attended with most unfavorable results. In two cases the sciatic nerve was stretched for tetanus

arising from wounds of the foot, in one instance the median was subjected to the same operation for disease originating in a comminuted fracture of the thumb, and in neither of these cases did abatement of the spasms or other improvement in the patient's condition attend the procedure. Amputation of the hand in two cases, of the forearm in three, and of the leg in two, was resorted to without effect.

The second series of twenty-three fatal cases comprises those arising after surgical operations in the wards during the years from 1869 to 1879. There were altogether during this period 2,148 major operations performed in the Medical College Hospital with 402 fatal results from all causes, among which 23 or 5·7 per cent are attributable to tetanus, and occurred in the following instances :—

Excision of Scrotal tumours	...	8	Cases.
Amputation of Foot and Leg	...	7	„
„ „ Hand and Arm	...	6	„
Excision of Simple tumours,	...	2	„

These statistics serve to illustrate certain facts in connection with the general characteristics of tetanus in Bengal, how it affects the varied population, how the disorder is altered in its virulence and the frequency of its occurrence with special reference to age, and sex and season, how it influences the results of surgery, and in what direction the efforts towards alleviation have tended. Thus we find that *Trismus nascentium* occurs more frequently among the children of Europeans than among those of natives, for out of 34 cases, 21 were Europeans, and this observation is all the more striking when we consider the comparatively small proportion the European element is among the vast native population of Bengal. Referring still to infantile tetanus we find that it is indefinitely written about as being of the idiopathic variety: if however it is held that the source of irritation lies in any abnormal changes in the ligatured and divided umbilicus, then, it is truly traumatic. In Mahomedan and Jewish infants in this country however, there is no doubt, in many instances, as to the disease being traumatic, even though the umbilicus be free from complication. With these religious

persuasions the custom is to circumcise an infant on the eighth day, and in many instances tetanic symptoms supervene upon this procedure. Thus I find in nine of the infants affected, the penis was the focus of irritation to the nervous system, and in two cases the application of anodyne poultices to this part resulted in allaying the acuteness of the symptoms and in finally curing the little patients.

In adults tetanus seems equally disposed among Europeans and Natives; males were more affected than females, and in infants and adults the disease was more frequent than in children and persons over forty-five years.

In women idiopathic tetanus is very frequently associated with the puerperal period and with menstruation, for in 52 females affected, 29 were either menstruating, or they had just been confined at full term, or they had aborted.

The majority of cases occur in the winter months, and though no season enjoys a perfect immunity, least of the cases are noted in midsummer, the maximum being in December and the minimum in July.

The general death-rate in tetanus, as shown by the statistics of the years from 1869 to 1879, is 75·7 per cent, in the idiopathic it was 69·7, and in the traumatic so high as 83·4 per cent. The disease is certainly most fatal in the early stage, almost one-third of the cases dying within the first two days of the attack, whereas recovery may almost as surely be prognosticated after the disease has passed the fifteenth day.

Of injuries resulting in tetanus, those by machinery, compound fractures and punctured wounds have yielded the largest proportion of cases.

The appearance of tetanus in operation cases has been attended with the most deplorable results, as in 23 cases which occurred not one recovered. It appears that operations upon the scrotum involving much interference with the testis or cord are peculiarly prone to the supervention of tetanus. Thus in five out of eight cases in which elephantoid growths were removed from the scrotal region, castration seemed necessary and was accomplished, and in all of these tetanic symptoms were manifested. Another case in point, was in the radical cure of hernia, by Wood's

operation, here the patient died of tetanus, and it was found on *post-mortem* examination that the spermatic cord was strangulated in the wire suture used in approximating the pillars of the abdominal ring and obliterating the canal.

Our treatment, though aiming primarily at removal of the cause and the subsequent tranquillising of the nervous system, seems to border much on the domain of empiricism, for when one analyses the treatment, one is compelled to confess his ignorance as to the part which any single or special remedy may have exerted upon a fortunate occurrence and to say that the cure seemed accidental. However this may be, the success in the treatment of tetanus in the Medical College Hospital during the years from 1869 to 1879, is even more favorable than books on the subject would lead us to surmise, and if any drugs are to be relied on, favour is decidedly on the side of chloral, opium in the form of morphia and opium-smoking. Unfortunately *nerve-stretching* has not been attended with the same success in tetanus as in the case published by M. Paul Vogt, nor even with the partial relief reported as occurring in two cases which came under the treatment of Dr. Ebenezer Watson of Glasgow. Amputation has not afforded any satisfactory results, nor has division of nerve trunks been attempted as a *dernier ressort*.

BABOO JADUB KRISTO SIRCAR had collected statistics of 85 cases in the Mayo Hospital. The mortality was 56 per cent. Chloral hydrate and Potassium bromide were the drugs used in treating the disease. Calabar bean had been tried in a few cases. The spinal ice bag enemata and milk diet had also been employed. There was not much difference between the death-rate of idiopathic and traumatic tetanus. He had seen a case of traumatic tetanus in the North Suburban Hospital when amputation of the foot was performed by the late Assistant-Surgeon Lucki Narain Bose. The patient recovered.

He had also seen Sir Joseph Fayrer amputate a finger for traumatic tetanus without avail. Dr. Charles was in the habit of blistering and applying *Cannabis Indica* to the blistered surface with success.

DR. MCLEOD remarked that the comparatively low death-

rate in traumatic tetanus was surprising. The doctrine taught in the text books was that it was almost invariably fatal. He had had lately under his care a very well marked case of local tetanus. A muscular young man had injured the upper end of his right radius by direct violence. Tetanus set in, but it was entirely limited to the corresponding extremity which was rigid and thrown into tetanic convulsions. So strong were these that a rectangular wooden splint which had been applied was broken. There was no trismus but the usual constitutional symptoms appeared. The part was cut down on, the bone was found to be comminuted, tension was relieved and the patient was recovering, when after two or three days' high fever, a measly eruption broke out all over the body succeeded on defervescence by general desquamation of cuticle, typhoid prostration and death.

DR. CAYLEY had seen a measly eruption in chronic tetanus coming on in the second or third week. He had a case of trismus and spasm of the sterno-mastoid with no rigidity or spasms elsewhere. The patient was a boy of 10 years, he had been getting daily 60 grains of Chloral Hydrate with Bromide of Potassium. A number of worms had been voided after the administration of santonine. He had seen several cases in which amputation had been resorted to for the cure of tetanus, but they all proved fatal.

The statistics which he had collected from the records of the Mayo Hospital and published in the *Indian Annals of Medical Science* did not furnish evidence in favour of the use of Chloral.

From 1871 to 1874, before chloral had come into use, 49 cases of traumatic and 56 of idiopathic had been treated, among which 23 and 26 deaths had occurred which yielded percentages of 47 and 46. In 1875-76 when chloral was extensively used the corresponding figures were—cases 28 and 23, deaths 14, and 14 or 50 and 64 per cent.

BABOO LALL MADHUB MOOKERJEE had a case under treatment arising from injury of the leg of 23 days' duration. The treatment employed was a combination of Chloral hydrate (60 grains per diem) and tincture of Cannabis Indica.

The patient was doing well.

He thought the reason why tetanus appeared to be more common among Europeans was that natives, more particularly of the better class, were averse to taking their children to hospital. Much of the tetanus in native children was, he considered, due to the treatment of the navel. The cord was roughly divided with a piece of sharpened bamboo. He had seen a case of tetanus in which 200 worms were voided. Injections of atropine had been used, and recovery took place.

Dr. CHAMBERS was of opinion that infantile tetanus was due to bad hygiene—more particularly to overheated rooms and chills. The eruption which had been alluded to was perhaps what had been described as surgical erythema.

BABOO KANNY LALL DEY had found in a fatal case of tetanus caused by burn a general eruption of a patchy kind. It was worst in the places that had been burnt.

BABOO BIPIN BEHARI KUMAR described a case of tetanus of the left half of the face after a wound of the left temple. Recovery took place after a fortnight.

MR. WALLACE explained that the statistics of infantile tetanus referred to children born in the hospital, and that as more native than European children were born, the inference he had stated was correct as far as the experience of the hospital was concerned.





INDEX.

Abscess of liver antiseptically treated,	91
Acute œdema. discussion on—	29, 121
— in the Mauritius,	134
— notes on—	57, 73
— remarks on—	12
Amputation, antiseptic, of arm,	125
—, Carden's, case of—	53
Aneurism, popliteal, case of—	127
Arsenical poisoning, state of the heart in—	12
<hr/>	
Beri-beri,	12, 29, 57, 73, 121, 134
Bronchocele, successful removal of—	137
<hr/>	
Cancer, prevalence of. in India,	126
Carbolic acid poisoning, case of—	117
Cataract extraction, loss of vitreous after—	39, 47
Catgut drain. absorption of—	99
Chloroform asphyxia, resuscitation from—by Howard's direct method,	132
Cholera and fever, relation between—	147
Chylous urine, case of—	56
Colic, peculiar method of treating—	12
Concretion, intestinal, cases of—	155
Cricoid cartilage, necrosis of—	131, 191
<hr/>	
Dysmenorrhœa, peculiar treatment of—	28
<hr/>	
Embolism of basilar artery, case of—	104
Empyema, traumatic of right pleura, case of—	187
Epithelioma of right eye,	209
Ergot, use and abuse of—in labour,	196
Exostosis of femur, case of successful removal of—	28, 53
<hr/>	
Fæcal fistula, case of—	11
Fever and cholera, the relation between—	147
Fever epidemic, notes on—	57
Fibroma, case of successful removal of—	28
<hr/>	
Hæmatoma, case of—successfully removed,	170
Heart, aneurism of anterior flap of mitral valve,	56
— case of malformation of the—	9
— hypertrophy and dilatation of right ventricle,	56
— state of, in arsenical poisoning,	12
— subendocardial ecchymosis of—	91
— with bifid apex,	56
Hepatic abscess antiseptically treated,	91
Hernia of lung, cases of—	133
— Strangulated omental, successfully treated,	99

Hodgkin's disease, case of—	193
Intestine, case of mal-development of—	189
Jejunum, abrupt stricture of the—	90
———— perforating ulceration of the—	90
Kurchicine	175
Lithotrity, fatal case of—	212
Liver abscess antiseptically treated,	91
Lung, carnified, case of—	139
Lymphadenoma, case of—	139
Lymph scrotum, case of—	210
Members, list of—	3
Molluscum fibrosum, case of—	115
Necrosis, circumscribed, of cancellous bone	90
Office-bearers, list of—	3
Ovariectomy, successful case of—	46
Poisoning by carbolic acid, case of—	117
President and Vice-President. election of—	123
Pulmonary embolism, case of—	191
Pyæmia, post-mortem lesions found in a case of—	103
Radius, dislocation of and fracture of ulna	19
———— fracture of the neck of the—	28
Rules of the Calcutta Medical Society	5
Scrotal tumour, observations on—	104
———— tumours, the antiseptic removal of—	159
Scrotum, lymph. case of—	210
Spleen. case of enormous enlargement of—	90
Tetanus, statistics of—in the Medical College Hospital	213
Tumour, enchondromatous, of submaxillary gland.. ..	130
———— malignant. of femur,	126
———— medullary of arm,	125
———— papillomatous of cornea	207
———— pendulous labial. case of—	125
———— sarcomatous of back	169
Ulna, fracture of—and dislocation of radius,	19
Urethral calculus, sudden death after extraction of—	157
Vitreous, notes on loss of, after cataract extraction,	39, 47
Wrightia antidysenterica, medicinal properties of—	175



